



UNIVERSITY OF L'AQUILA



Department of Health, Life and
Environmental Sciences

Single Second Cycle Degree in MEDICINE & SURGERY

**Laurea Magistrale a Ciclo Unico in
Medicina e Chirurgia**

Course Catalogue 2014-15

Academic year starts the last week of September and ends the first week of June.

1st Semester - *Starting date:* last week of September, *end date:* 3rd week of January

2nd Semester - *Starting date:* last week of February, *end date:* 1st week of June

Exams Sessions: I) from last week of January to 3rd week of February, II) from 2nd week of June to end of July, III) from 1st to 3rd week of September

**Comprehensive Scheme of the Single Second Cycle Degree
in MEDICINE AND SURGERY**

YEAR	CODE	COURSE	Credits (ECTS)	Semester
I	D0254	Medical Physic	6	1
	D0258	Basic Biochemistry	6	1
	D0266	Human Anatomy	11	1 and 2
	D0259	Biology, genetics and of bases of human behavior	13	1
	D1386	Biochemistry	8	1
	D0286	Histology and Embriology	7	2
	D3366	Epistemology and History of Medicine	3	2
II	D4027	Human Anatomy II	6	1
	D4075	Human Physiology I	8	1
	D4804	Human Physiology II	9	2
	D3372	General Pathology, Immunology, Immunopathology and general microbiology	13	2
	D4801	Medical Informatics, Biomedical Statistics, and scientific English	12	2
III	D0396	Laboratory Medicine and Integrated Diagnostics	12	1
	D4800	General Psysiopathology and Molecular Pathology	7	1
	D0392	Semeiotics and Clinical Methodology	13	1
	D4327	Pathological Anatomy	5	2
	D4069	Internal Medicine, Endocrinology, Clinical Immunology and Infectious Diseases	13	2
IV	D4330	Pathological Anatomy II	6	1
	D1646	General and Special Pharmacology	8	1 and 2
	D4068	Systematic Pathology	10	1
	D1650	Medical and Surgical Oncology	16	2
V	D2086	Diagnostic Imaging and Radiotherapy	9	1
	D2180	Specialized Medical and Surgical Disciplines	15	1
	D1606	General and applied hygiene and techniques of hygiene and prevention	10	1
	D1674	Sport Medicine	8	1
	D1696	Nervous System Diseases	12	2
	D1692	Pediatrics	8	2
	D1834	Psychiatry and Child Neuropsychiatry	10	2
VI	D2180	Specialized Medical and Surgical Disciplines	15	1
	D1844	General surgery, endoscopy and transplantation	16	1
	D4040	Gynaecology and obstetrics, reproductive and sexuality medicine	11	1
	D4067	Dermatology and Rheumatology	6	2
	D1884	Medical and surgical emergencies	12	2
	D2152	Internal Medicine and Geriatrics	11	2
		<i>Optional Activities/Courses</i>	8	1 or 2
		<i>Thesis</i>	15	2

Programme of “FISICA MEDICA” “MEDICAL PHYSICS”		
D0254, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 1 st year, 1 st semester		
Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25 hours)		
Teacher: Angelo GALANTE		
1	Course objectives	The Medical Physics course has been designed to convey knowledge and understanding of basic physics principles, providing an introductory basis for other courses like Biology, Physiology, Biochemistry. Students will become able to detect the physical phenomena involved in different aspects of clinical practice, solve simple problems and perform estimates of order of magnitudes of the related physical quantities.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Mechanical action between bodies in contact; -Dynamic properties of gases and fluids; -Wave propagation; -Thermal and thermo dynamical aspects of gases; -Fundamentals of electrical and magnetic, the laws that govern potential and current; -Light propagation; -Nuclear phenomena. On successful completion of this module, the student should <ul style="list-style-type: none"> ○ acquire knowledge and understanding of the basic physics principles of nature; ○ apply knowledge and understanding of the physics principles involved in the functioning of living beings as well as technological instrument of common use in working practice; ○ demonstrate skill in identifying the physics principles involved their professional activity; ○ be able to solve simple problems as well as estimate the order of magnitude of the physical quantities involved.
3	Prerequisites and learning activities	The student must know: elementary mathematics, first and second order equations, logarithms, exponentials. Some knowledge of differential calculus is useful but not necessary
4	Teaching methods and language	During classroom lectures, the topics contained in the program of the module will be illustrated and commented. Emphasis will be put on the applications to biology and medicine of basic physics principles. Problems will be solved during lectures and lessons devoted to the solution of physical problems will be performed at the end of each didactic Unit. Language: The classroom lectures will be in Italian. Reference books: <ul style="list-style-type: none"> - Halliday D., Resnick R., Walker J.: <i>Fondamenti di Fisica</i>, III ed., Casa Editrice Ambrosiana, Milano. - Serway-Jewett, <i>Principi di Fisica</i>, EdiSES S.r.l., Napoli. - Scannicchio D., <i>Fisica Biomedica</i>, EdiSES S.r.l., Napoli.
5	Assessment methods and criteria	The achievement of the objectives of the module will be assessed through a written exam, consisting in exercises and open questions on the topics of the course. An oral exam is possible, on a voluntary basis, for students with a score of the written exam slightly below the minimum or in the best 5% percentile.

Programme of “PROPEDEUTICA BIOCHIMICA” “BASIC BIOCHEMISTRY”		
D0258, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 1 st year, 1 st semester		
Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25hours)		
Teacher: Argante BOZZI		
1	Course objectives	The goal of this course is to provide the chemical basis for the studies of the main inorganic and organic compounds for a better understanding of their involvement in human biomolecular processes. Particular attention is devoted to redox reactions and to ionic reactions in aqueous solution. Also, the main organic reactions, implicated in biochemical

		<p>mechanisms characterizing living organisms, are carefully examined.</p> <p>On successful completion of this course the student should be aware of the main classes of inorganic and organic compounds, of their physiological function either inside and outside the cellular milieu of human organism. In addition, the student should be able to handle the foundations of the electrochemistry (for a better understanding of the mitochondrial oxidative phosphorylation), the principles of the gas laws (useful in treating the anaesthetic gaseous compounds) and the kinetics of isotopic decay (useful for their manipulation in bio-medicine).</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ol style="list-style-type: none"> Section of Inorganic chemistry: Atomic structure; theory of chemical bonds; weak interactions responsible of the solid, liquid and gaseous state. The gas and their laws. The oxido-reductive (redox) reactions. The reactions in aqueous solution. The theory of acids and bases. Chemical equilibrium; homogeneous and heterogeneous and their significance. The effect of the common ion on the heterogeneous equilibrium (the formation of renal calculus and of gall stones). The ionization of water and the significance of pH; the ionization of weak acids and bases and their role in buffer solutions (inorganic and organic buffers acting either extracellularly and intracellularly). Short essays on thermodynamics and kinetics. Summary of electrochemistry with particular attention to Voltaic piles and to fuel cells. Section of Organic chemistry: The hydrocarbon compounds and their main reactions. The aromatic compounds and their reactions; the polycyclic aromatic compounds and their potential mutagenic and cancerogenic potential. Principles of optical activity; the carbon chirality and its influence on the biochemical reactions. The reactions of nucleophilic substitutions; the biological methylations. The main reactions of alcohols, aldehydes, carboxylic acids and of their derivatives. The amines and their reactions; polyamines and signal transductions. The nitrosamines as a powerful cancerous agents and their formation in the stomach upon ingestion of food treated with sodium nitrite as preserving agent. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have acquired deep knowledge of the structure and function of the main classes of inorganic and organic compounds related to human physiologic processes; ○ have knowledge of and understanding of the basic reaction mechanisms either inorganic (acids and bases and inorganic buffers) and organic (polymerization; S.E.A.; SN1 and SN2; hemiacetal; esterification; saponification and ammoniolysis); ○ have knowledge of and understanding the strong correlations between the structure-function relationships of the most inorganic and organic compounds useful for the biochemical reactions in the human organism; ○ make judgments about the kinds of the mechanisms of action of the main inorganic and organic reactions of interest in humans; ○ understand and explain the foundations of inorganic and organic chemistry of medical interest; ○ demonstrate capacity for reading and understand other texts/articles on related topics.
3	Prerequisites and learning activities	The student must know Human Biology and the Basics of Medical Physics
4	Teaching methods and language	<p>Lectures; exercises, tutorials; home work</p> <p>Language: Italian/English</p> <p>Ref. Text books</p> <ul style="list-style-type: none"> - Binaglia L., Giardina B.: <i>Chimica e propedeutica biochimica</i>, Ed. McGraw-Hill, 2006. - Bettelheim F.A., Brown W. H., Campbell M. K., Farrell S. O. <i>Chimica e Propedeutica Biochimica</i>, Ed. EdiSES, 2012.
5	Assessment methods and criteria	Written exam.

<p align="center">Programme of “ANATOMIA UMANA 1” “HUMAN ANATOMY 1”</p>		
<p>This course is developed in two semesters and is composed of five Modules: 1) Systematic anatomy, 2) Clinical Anatomy, 3) Topographic Anatomy, 4) Applied Anatomy, 5) Applied Anatomy II</p>		
<p>D0258, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 1st year, 1st and 2nd semester</p>		
<p align="center">Number of total ECTS credits: 11 (total workload: 275 hours, 1 ECTS credit = 25 hours)</p> <p>The Courses of Human Anatomy 1 and Human Anatomy 2 (Scientific Sector: BIO/16), are part of the Morphological Area, that is section of the Basic Disciplines and they comprehend 17 Credits.</p>		
<p>Teachers: Guido MACCHIARELLI (coordinator), Serena BIANCHI, Maria Adelaide CONTINENZA, Antonella VETUSCHI, Roberta SFERRA</p>		
1	Course objectives	<p>The goal of this Module is to understand the systematic structural organization of the normal human body from the macroscopic level to the microscopic level, including the main ultrastructural aspects.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the modules include: PART 1: GENERAL AND LOCOMOTOR APPARATUS. I semester (ECTS = 4) A) General anatomy. Organization of the human body systems and Apparatus. Anatomical terminology. B) Locomotor Apparatus: structure and organization of the bones, joints and muscles, including the basics morphofunctional movement. Gross anatomy of skeletal segments, joints and muscles with elements of topographic, radiological, clinical, and applied anatomy.</p> <p>PART 2: CIRCULATORY, RESPIRATORY, DIGESTIVE, URINARY AND GENITAL APPARATUS. II semester (CFU = 7) Gross anatomy, microscopic organ anatomy including applied anatomy through observation of organs using optical microscopy and topographic, radiological, clinical and applied anatomy, with elements of organogenesis: A) Circulatory: heart, pericardium, blood vessels and lymphatic vessels, lymphoid and hematopoietic organs. B) Respiratory: nose, nasal cavity and sinuses, larynx, trachea, bronchi, lungs, pleura. C) Digestive: oral cavity, salivary glands, isthmus of the mouth, pharynx, esophagus, stomach, intestines, liver and bile, pancreas, peritoneum; D) Urinary: kidneys, urinary tract; E) Genital: gonads, genital tract, glands, external genitalia, perineum.</p> <p>On successful completion of this Module the student should:</p> <ul style="list-style-type: none"> o demonstrate a deep knowledge of body planning, o be able to recognize the shape and structure of organs and identify their location in the regions of the body; o acquire a comprehensive knowledge and understanding of the human body tissues; o demonstrate ability to integrate information acquired from lectures with the microscope observation of histological slides; o demonstrate skill in organ diagnosis by light microscopy and ability to describe preparations and models of organs and structures of the human body; o be able to explain morphofunctional and clinical correlations o demonstrate capacity for reading and understand other texts on related topics. <p>The acquired abilities are oriented to both professional (specialization) and research (doctorate) activities.</p>
3	Prerequisites and learning activities	<p>Essential for the study of anatomy is the knowledge of biology, histology, embryology, as well as basic physics and basic biochemistry.</p>
4	Teaching methods and language	<p>Lectures, seminars, microscope training and testing, 3D model description. Language: Italian and English Ref. Text books: - Anastasi G. et al: <i>Anatomia Umana</i> – Edi-Ermes 2011 - Standring S.: <i>Anatomia del Gray. Le basi anatomiche per la pratica clinica</i>- Elsevier-Masson, 2009 - Tazzi A., Montagnani S.: <i>Trattato di Anatomia Umana</i> - Idelson Gnocchi, 2006 - Anastasi G., Tacchetti C. <i>Anatomia Umana Atlante</i>, Ediermes, 2014 - Netter F.H.: <i>Human Anatomy Atlas</i> – Elsevier 2012 English books and atlases of human body anatomy are accepted.</p>

		<p>Web Resources Virtual Anatomy: Anatomy hot links: http://aaatoday.org/non-aaa-resourcelinks Gray's Anatomy 1918: Anatomy of the Human Body http://www.bartleby.com/107/ The visible human project: http://www.nlm.nih.gov/research/visible/visible_human.html Vesalius: http://www.vesalius.com/ A.D.A.M. (Animated Dissection of Anatomy for Medicine): www.adam.com</p> <p>Dissection: http://www.lawrencegaltman.com/Naugbio/CADAVER/GALLERY.htm</p> <p>Microscopic Anatomy: http://www.path.uiowa.edu:80/virtualslidebox/nlm_histology/content_index_db.html http://www.path.uiowa.edu/virtualslidebox/ http://www.histology-world.com/contents/contents.htm#female http://www.lab.anhb.uwa.edu.au/mb140/</p>
5	Assessment methods and criteria	<p>Written tests and oral exams. The student will be assessed on his/her demonstrated ability to discuss the main course contents, using the appropriate scientific terminology.</p>

<p>Programme of “BIOLOGIA, GENETICA E BASI DEL COMPORTAMENTO UMANO” “BIOLOGY, GENETICS AND OF BASES OF HUMAN BEHAVIOR” This course is composed of four Modules: 1) Applied Biology, 2) Medical Genetics, 3) Bases of Human Behavior, 4) Medical Genetics Traineeship</p>		
D0259, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 1 st year, 1 st and 2 nd semester		
Number of ECTS credits: 13 (workloads is 325 hours; 1 credit = 25 hours)		
1) APPLIED BIOLOGY (5 ECTS)		
Teacher: Sandra CECCONI		
1	Course objectives	<p>This course of Applied Biology is offered as foundation course for students who are planning to work in the field of human health. The course covers basic properties of prokaryotic and eukaryotic cells by describing their structures and components, and by comparing the main regulative processes controlling gene expression. For eukaryotic cells, the principal molecular pathways controlling cell division and apoptosis are examined. Students are not only introduced to approach cell biology, but are also stimulated, when possible, to critically assess media reports concerning science and human health.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: DNA organization, replication, repair and transcription; gene expression; cell cycle regulation; mitosis and meiosis; signal transduction; apoptosis; cloning; stem cells</p> <p>After successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have profound knowledge of key regulative processes occurring in prokaryotic and eukaryotic cells ○ have knowledge and understanding of the regulation of gene expression and of the principal hormone-dependent molecular pathways ○ understand and explain the processes of protein synthesis and secretion, the role and structure of plasma membrane and cytoskeleton ○ demonstrate capacity for reading and understand other texts on related topics ○ be able to apply information to other modules, and to continue his/her learning about these topics.
3	Prerequisites and learning activities	<p>The student must have a knowledge of the principal biological processes of prokaryotic and eukaryotic cells.</p>
4	Teaching methods and language	<p>Lectures, discussion with students about selected topics Language: Italian Ref. Text Books: - Alberts B. et al., <i>Biologia molecolare della cellula</i>, Zanichelli, 2005. - Karp G. <i>Biologia cellulare e molecolare. Concetti ed esperimenti</i>. EdiSES Editore,</p>

		2010
5	Assessment methods and criteria	Written or oral exam
2) MEDICAL GENETICS (4 ECTS)		
Teacher: Elvira D'ALESSANDRO (coordinator)		
1	Course objectives	Medical Genetics is a foundation course for students who are planning to work in the field of medicine. The course aims to guide students to an understanding of the molecular mechanisms by which biological characteristics are transmitted from generation to generation and expressed in the individual. The course will provide the new knowledge of the genome in the study of human molecular genetics with particular focus on regulation and deregulation of gene expression and on gene mutations in human diseases. In particular, the student will learn the main approaches for genetic analysis of Mendelian and complex characters understanding cellular and molecular mechanisms that underlay human inheritance. We will also present the basic concepts of population genetics and the genetics of cancer.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>TRANSMISSION OF HEREDITARY CHARACTERS</p> <ul style="list-style-type: none"> - Knowledge of the laws and methods of transmission of hereditary characteristics - Segregation analysis of genes in man - family trees <p>GENOME</p> <ul style="list-style-type: none"> - Organization of the nuclear genome - Organization of the mitochondrial genome <p>CHROMOSOMES</p> <ul style="list-style-type: none"> - Molecular structure of eukaryotic chromosomes - Human chromosomes - human karyotype - Changes in the number and structure of human chromosomes <p>GENE</p> <ul style="list-style-type: none"> - Molecular and functional structure gene - Regulation of gene expression - Gene mutations: causes and mutation rate - Mutations as cause of disease in humans <p>POPULATION GENETICS - QUANTITATIVE GENETICS</p> <ul style="list-style-type: none"> - Mendelism in populations and the Hardy-Weinberg equilibrium - Multifactorial Traits – Inheritance of Multifactorial disorders - Basic concepts of genetics of immunity : Blood types, Bombay phenotypes HLA types <p>GENETIC BASIS OF CANCER</p> <p>Oncogenes and tumor suppressor genes. Chromosomal aberrations in tumors. "Hereditary Tumors".</p> <p>After successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of of eukaryotic gene structure - the regulation and deregulation of eukaryotic gene expression - gene mutations as cause of human diseases o have knowledge and understanding of patterns and modes of inheritance (Mendelian and non-Mendelian traits/diseases, genomic disorders, epigenetics, genetic modifiers, multifactorial disorders, variable penetrance and expressivity) o understand and explain Mechanism of origin of numerical chromosome abnormalities - major types of structural chromosome abnormalities and their basic implications o demonstrate capacity for reading and understand other texts on related topics. o be able to apply information to other modules, and to continue his/her learning about these topics.
3	Prerequisites and learning activities	The student must have a knowledge of the principal biological processes.
4	Teaching methods and language	<p>Lectures, discussion with students about selected topics</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Russell P.J.: <i>Genetica: un approccio molecolare</i>, Pearson Italia, Terza edizione, 2010 - Strachan T., Read A.: <i>Genetica Molecolare Umana</i>, Zanichelli, 2012

5	Assessment methods and criteria	Oral exam
3) BASES OF HUMAN BEHAVIOR (3 ECTS)		
Teacher: Domenico PASSAFIUME		
1	Course objectives	The goal of the course is to provide the knowledge of the fundamental principles of psychology. On successful completion of this course, the student should understand the fundamental concepts of Psychology, and should be aware of the potential disturbances on cognitive, behavior and emotion domain which he may face during his work.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Psychology and science: Methods: observation, experiment, single case examination Instruments: check list, inventory, test Theory and School: psychophysiological Psychology, Psychoanalysis, S-R, Gestalt, Cognitive Psychology Brain and Behavior: Central Nervous System, brain functions, hemispheric differentiation, cortical areas Cognitive abilities: learning, memory, language, attention, space perception, emotion Cognitive Deficit: aphasia, apraxia, amnesia, agnosia, visuospatial disorders, attention deficit, neglect</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have good knowledge of basic techniques in Psychology ○ have knowledge and understanding of the consequence of organic or functional brain disease ○ understand and explain the meaning of complex behavior ○ understand the fundamental concepts of brain – behavior relations ○ demonstrate skill in behavior observation, and ability to conceive a response to inappropriate behaviour ○ demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	No prerequisites
4	Teaching methods and language	<p>Lectures, discussion with students about selected topics Language: Italian Ref. Text Books:</p> <ul style="list-style-type: none"> - Canestrari R., Godino A., <i>La psicologia scientifica- Nuovo trattato di psicologia</i>, CLUEB, Bologna, 2011 - Gerring RJ, Zimbardo PG, Anolli LM: <i>Introduzione alla Psicologia Generale</i>, Pearson ed., 2012 - Schacter D.L., Gilbert D.T., Wegner D. M.: <i>Psicologia Generale</i>, Zanichelli ed., 2010
5	Assessment methods and criteria	Written exam
4) MEDICAL GENETICS TRAINEESHIP (1 ECTS)		
Teacher: Elvira D'ALESSANDRO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2). It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles of Genetics.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - To be able to recognize inheritance patterns. Based on the family tree , to be able to identify all forms of Mendelian and non-Mendelian inheritance,. - Describe simple chromosomal abnormalities using correct nomenclature and predict in general terms their possible effect on a person and their offspring - Apply the Hardy-Weinberg Law in analyzing population genetics for gene frequency, equilibrium, and heterozygote frequency. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of the techniques of karyotyping and specific staining techniques, array technologies used in cytogenetics and explain their medical applications ○ Acquire basic knowledge of the molecular mechanisms of Mendelian disorders ○ Acquire basic knowledge to illustrate the reason why DNA sequence changes can

		cause clinical problems, including examples of phenotypic heterogeneity and of the role of dynamic mutations
3	Prerequisites and learning activities	The student must know basics concepts of genetics
4	Teaching methods and language	Team work and clinical practice Language: Italian Ref. Text Books: - Strachan T., Read A.: <i>Genetica Molecolare Umana</i> , Zanichelli, 2012
5	Assessment methods and criteria	Oral exam

Programme of "BIOCHIMICA" "BIOCHEMISTRY"		
This course is composed of two Modules: 1) Structure and function of Biomolecules, 2) Bioenergetics and Metabolism		
D1386, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 1st year, 2nd semester		
Number of ECTS credits: 8 (workload is 200 hours; 1 credit = 25hours)		
Teacher: Gabriele D'ANDREA		
1	Course objectives	The goal of this course is to provide the structural, functional, and metabolic bases of the main human biomolecules, underlining the pivotal role of enzymes and their cofactors as well as the crucial play carried out by the metabolic regulation. On successful completion of this course the student should be aware of the biomolecular basis, metabolic sequences, and metabolic regulation concerning the major biochemical processes occurring in the most important human organs and tissues. Moreover the student should understand the foundations of the enzyme kinetics and bioenergetics.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Carbohydrates and Glycobiology. Lipids, Membranes, Transport. Amino Acids and Peptides. Proteins: composition, functions, structures. Proteins of the connective tissue. Plasma proteins. Conjugated proteins of biomedical interest. Hemoglobin and transport of oxygen, carbon dioxide, nitric oxide. Cofactors and Vitamins. Enzymes and enzyme kinetics. Bioenergetics and redox biology. Biochemical digestion of food. The glycolysis and the oxidation of pyruvate. Gluconeogenesis, glycogen metabolism, control of blood glucose. Catabolism of hexoses other than glucose. Pentose-phosphate pathway. Citrate cycle. Oxidative phosphorylation. Metabolism of lipids: lipogenesis-lipolysis, ketogenesis. Metabolism of cholesterol. Metabolism of amino acids. Metabolism of nucleotides and heme. Uric acid and bile pigments. Biochemistry of the endocrine system. Metabolism of organs and tissues and their correlations and integrations. On successful completion of this module, the student should <ul style="list-style-type: none"> ○ have acquired deep knowledge of the structure and function of the main human biomolecules; ○ have knowledge of and understanding the basic metabolic pathways and their regulation in humans; ○ have knowledge of and understanding of the strong correlations between the human dysmetabolism and the onset of the disease; ○ make judgments about the type of enzymatic inhibitions; ○ understand and explain the foundations of bioenergetics; ○ demonstrate capacity for reading and understand other texts/articles on related topics.
3	Prerequisites and learning activities	The student must know the basic notions connected with previous courses such as General & Organic Chemistry or Propedeutical Biochemistry.
4	Teaching methods and language	Lectures based on Power Point presentations Language: Italian Ref. Text books: 1) Nelson Michael D.L., Cox M. <i>Introduzione alla Biochimica di Lehninger</i> , Zanichelli, 2011. 2) Devlin T.M. <i>Biochimica con aspetti clinici.</i> , EdiSES, Napoli, 2011.

5	Assessment methods and criteria	Written and oral exam
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<p align="center">Programme of "ISTOLOGIA ed EMBRIOLOGIA" "HISTOLOGY and EMBRIOLOGY"</p>		
<p>The course is composed of two Modules: 1) Histology, 2) Embriology</p>		
<p>D0286, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 1st year, 2nd semester</p>		
<p align="center">Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)</p>		
<p align="center">1) HISTOLOGY (4 ECTS)</p>		
<p>Teacher: Bianca Maria ZANI (coordinator)</p>		
1	Course objectives	<p>The Module provides an overview of the structure of mammalian cells and their organisation into tissues. Topics include the morphological examination and description of epithelium, glands, connective tissue (e.g. cartilage, bone, teeth and blood), muscle, and nervous tissues. An emphasis will be placed on the recognition of cell types and the correlation of structure and function.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the Module include:</p> <ul style="list-style-type: none"> - Basic cell biology and histochemistry; - Histology of human tissues. <p>Students are expected to:</p> <ul style="list-style-type: none"> o acquire knowledge and understanding of cell structure and tissues organization o be able to describe the normal structure and function of various cell types, tissues, and organs, and to differentiate the histological structures from each other on practical examination o to broadly understand abnormalities in development. o demonstrate the ability to integrate information from lectures and practical activities on the histological and embryological topics
3	Prerequisites and learning activities	<p>The student must know the basic notion of chemistry, biochemistry and cell biology as acquired in the high schools.</p>
4	Teaching methods and language	<p>Lectures; Pratical Course with Light Microscope for observation of slides from all tissues. Language: Italian Ref. Text books :</p> <ul style="list-style-type: none"> - Monesi V., <i>Histology</i>, Piccin Ed. 2008. - Ross R.H., <i>Histology text and atlas</i>, (Ambrosiana Ed), 2010.
5	Assessment methods and criteria	<p>Oral examination. Students are asked to describe a couple of tissues, their cells and embryonic derivation.</p>
<p align="center">2) EMBRIOLOGY (3 ECTS)</p>		
<p>Teacher: Paola DE CESARIS</p>		
1	Course objectives	<p>The Module covers human embryonic and fetal development from fertilization to birth. The emphasis will be placed on the morphological changes that take place during development and on the development of the individual organ systems. The Embryology course will enable students to broadly understand abnormalities in development.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the General and Oral Embryology Module include:</p> <ul style="list-style-type: none"> - General Human Embryology and Organogenesis <p>Students are expected to:</p> <ul style="list-style-type: none"> o acquire knowledge and understanding of the embryological derivation of cell structure and tissues organization; o to broadly understand abnormalities in development; o demonstrate the ability to integrate information from lectures and practical activities on the histological and embryological topics; o be able to describe the process of tissues development; o to differentiate tissues by origin, formation, composition, components, characteristics, and function;

		o explain clinical considerations relating to the tissues.
3	Prerequisites and learning activities	The student must know the basic notion of chemistry, biochemistry and cell biology as acquired in the high schools.
4	Teaching methods and language	Lectures; Pratical Course with Light Microscope for observation of slides from all tissues. Language:Italian Ref. Text books : - Armato U. et al. <i>Embriologia Umana</i> . Idelson-Gnocchi, 2012 - Moore K., Persaud T.V., Torchia M.G., <i>Lo sviluppo prenatale dell'uomo. Embriologia ad orientamento clinico</i> , Edra Ed., 2014. - Sadler T.W., <i>Embriologia medica di Langman</i> , Elsevier, 5th ed., 2013.
5	Assessment methods and criteria	Oral examination. Students are asked to describe a couple of tissues, their cells and embryonic derivation.

Programme of "EPISTEMOLOGIA E STORIA DELLA MEDICINA" "EPISTEMOLOGY AND HISTORY OF MEDICINE"		
The course is composed of three Modules: 1) History of Medicine, 2) Epistemology, 3) Historical and scientific collocation of anatomical studies		
D3366, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 2 nd semester		
Number of ECTS credits: 3 (workload is 75 hours; 1 credit = 25 hours)		
1) HISTORY OF MEDICINE (1 ECTS)		
Teacher: Ferdinando di ORIO (coordinator)		
1	Course objectives	Aim of this Module is the introduction to medicine as practiced by trained professionals from ancient times to the present.
2	Course content and Learning outcomes (Dublin descriptors)	Module Contents: 1) Medicine in the ancient ages 2) Medical science and clinical practice 3) The birth of experimental medicine between positivism and evolutionism 4) The study of new dimension in medical knowledge On successful completion of this module, the student should o have profound knowledge of the main aspect of the history of medicine o have knowledge and understanding of the content and meaning of biomedical ideas of our time through the history of their evolution o understand and explain thought-leadership of the medical history in a global vision of the past o demonstrate skill in the influences on the development of medical thought o demonstrate capacity for reading and understanding other texts on related topics to check the impact of these influences on other areas of knowledge
3	Prerequisites and learning activities	The student must know the basic notion of history as acquired in the secondary school.
4	Teaching methods and language	Language: Italian, English Ref. Text Books: - Armocida G., Zanobio B., <i>Storia della Medicina</i> , Masson, Milano, 2002 - Kuhn T., <i>The Structure of Scientific Revolutions</i> , Einaudi 2009 - Additional notes will be given by the teacher
5	Assessment methods and criteria	Written / oral exam
2) EPISTEMOLOGY (1 ECTS)		
Teacher: Ferdinando di ORIO		
1	Course objectives	This Module aims to introduce the students to the philosophical bases of medical science.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: 1) The Renaissance and the philosophy of nature 2) The institutions and the images of science

		<p>3) The scientific revolution and the role of the Catholic Church in the development of science 4) Main topics about history of science that have contributed to present time</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of science philosophy o have knowledge and understanding of scientific paths that may have achieved milestones of exciting successes, o understand and explain a methodological mastery of the conceptual tools necessary for the cultural background , o demonstrate capacity for reading and understanding other texts on related topics necessary to approach ever more multifaceted vision of medicine without losing the importance of his "humanity".
3	Prerequisites and learning activities	The student must know the basic notion of philosophy as acquired in the secondary school.
4	Teaching methods and language	<p>Language: Italian Ref. Text Books:</p> <ul style="list-style-type: none"> - Armocida G., Zanobio B., <i>Storia della Medicina</i>, Masson, Milano, 2002 - Kuhn T., <i>The Structure of Scientific Revolutions</i>, Einaudi 2009 <p>Additional notes will be given by the teacher</p>
5	Assessment methods and criteria	Written / oral exam
3) HISTORICAL AND SCIENTIFIC COLLOCATION OF ANATOMICAL STUDIES (1 ECTS)		
Teacher: Guido MACCHIARELLI		
1	Course objectives	Aim of this Module is the introduction to knowledge of the body planning, of the construction of anatomical terminology, of the development of the study of the human body in cadaver and in the living people from the prehistory up to today, of the meaning of the study of the human body for the clinical practice.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ol style="list-style-type: none"> 1) Concept of Morphology and Anatomy; Anatomy terminology, Body Planning 2) History of Anatomy 3) The study of the Human Body in the cadaver: dissection, prosection, autopsy 4) The study of the human Body in living people and the human imaging <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have general knowledge of the main aspect of the history of anatomy o have knowledge and understanding of the body planning and of the study of the human body in order to organize a discussion on historical aspects in a comprehensive manner; o be able to explain the practical problems of human body cadaver observation and of the approach to the study of the living human body during clinical practice o demonstrate skill to evaluate independently, and motivated any different opinions about the problematic aspects of the study of the human body o demonstrate capacity for reading and understand other texts on morphologic and history of medicine related topics o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate concern to the study of human body cadaver dissection and body donation o be able to work in team showing commitment to tasks and responsibilities regarding the approach to study of human body in the cadaver and in living people o demonstrate capacity to be critical and self-critical on human body concerns
3	Prerequisites and learning activities	The student must know the basic notion of history as acquired in the secondary school
4	Teaching methods and language	<p>Lectures, Seminar Language: Italian, English Ref. Text Books:</p> <p>Documents and articles will be supplemented during class</p> <ul style="list-style-type: none"> - Moore K. et al. <i>Essential Clinical Anatomy</i>, Williams & Wilkins, 2014
5	Assessment methods and criteria	Written exam.

<p align="center">Programme of “ANATOMIA UMANA 2” “HUMAN ANATOMY 2”</p> <p>This course is composed of five Modules: 1) Systematic anatomy, 2) Clinical Anatomy, 3) Topographic Anatomy, 4) Applied Anatomy, 5) Applied Anatomy II</p>		
<p>D4027, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 2nd year, 1st semester</p>		
<p align="center">Number of total ECTS credits: 6 (total workload: 150 hours, 1 ECTS credit = 25 hours)</p> <p>The Courses of Human Anatomy 1 and Human Anatomy 2 (Scientific Sector: BIO/16), are part of the Morphological Area, that is section of the Basic Disciplines and they comprehend 17 Credits.</p>		
<p>Teachers: Guido MACCHIARELLI (coordinator), Maria Adelaide CONTINENZA, Serena BIANCHI, Antonella VETUSCHI</p>		
1	Course objectives	The goal of this Module is to understand the systematic structural organization of the normal human body from the macroscopic level to the microscopic level, including the main ultrastructural aspects.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the modules include: Macroscopic , Microscopic, Topographic, Radiological and Clinical Anatomy of Human endocrine apparatus, nervous system, Teguments and Special Senses. A) ENDOCRINE SYSTEM: Hypothalamic and neurosecretory hypothalamic nuclei, pituitary, pineal, thyroid, parathyroid, adrenal glands, pancreas, endocrine secretion and regulation of sex hormones; neuroendocrine diffuse system B) NERVOUS SYSTEM: General organization and classification of the central and peripheral nervous system. Spinal cord, brainstem, cerebellum, brain, midbrain and forebrain; meninges, brain ventricles and CSF; bike routes, streets sensitivity, general and specific, cranial nerves, spinal nerves and nerve plexus system sympathetic nervous ganglia and paraganglia. C) APPARATUS OF SENSITIVITY with particular regard to the equipment of sight and hearing. D) TEGUMENTS AND SPECIAL SENSES. Functional anatomy, macroscopic and microscopic skin, clinical anatomy of the breast.</p> <p>On successful completion of this Module the student should:</p> <ul style="list-style-type: none"> o demonstrate a deep knowledge of body planning, o be able to recognize the shape and structure of organs and identify their location in the regions of the body; o acquire a comprehensive knowledge and understanding of the human body tissues; o demonstrate ability to integrate information acquired from lectures with the microscope observation of histological slides; o demonstrate skill in organ diagnosis by light microscopy and ability to describe preparations and models of organs and structures of the human body; o be able to explain morphofunctional and clinical correlations o demonstrate capacity for reading and understand other texts on related topics. <p>The acquired abilities are oriented to both professional (specialization) and research (doctorate) activities.</p>
3	Prerequisites and learning activities	Essential for the study of anatomy is the knowledge of biology, histology, embryology, as well as basic physics and basic biochemistry.
4	Teaching methods and language	<p>Lectures, seminars, microscope training and testing, 3D model description. Language: Italian and English Ref. Text books:</p> <ul style="list-style-type: none"> - Anastasi G. et al: <i>Anatomia Umana</i> – Edi-Ermes 2011 - Standring S.: <i>Anatomia del Gray. Le basi anatomiche per la pratica clinica</i>- Elsevier-Masson, 2009 - Tazzi A., Montagnani S.: <i>Trattato di Anatomia Umana</i> - Idelson Gnocchi, 2006 - Anastasi G., Tacchetti C. <i>Anatomia Umana Atlante</i>, Ediermes, 2014 - Netter F.H.: <i>Human Anatomy Atlas</i> – Elsevier 2012 <p>English books and atlases of human body anatomy are accepted.</p> <p>Web Resources Virtual Anatomy: Anatomy hot links: http://aaatoday.org/non-aaa-resource/links Gray's Anatomy 1918: Anatomy of the Human Body http://www.bartleby.com/107/</p>

		<p>The visible human project: http://www.nlm.nih.gov/research/visible/visible_human.html Vesalius: http://www.vesalius.com/ A.D.A.M. (Animated Dissection of Anatomy for Medicine): www.adam.com</p> <p>Dissection: http://www.lawrencegaltman.com/Naugbio/CADAVER/GALLERY.htm</p> <p>Microscopic Anatomy: http://www.path.uiowa.edu:80/virtualslidebox/nlm_histology/content_index_db.html http://www.path.uiowa.edu/virtualslidebox/ http://www.histology-world.com/contents/contents.htm#female http://www.lab.anhb.uwa.edu.au/mb140/</p>
5	Assessment methods and criteria	<p>Written tests and oral exams. The student will be assessed on his/her demonstrated ability to discuss the main course contents, using the appropriate scientific terminology.</p>

<p>Programme of: "FISIOLOGIA UMANA I" "HUMAN PHYSIOLOGY I"</p>		
<p>This course is composed of two Modules: 1) Physiology of Cardiovascular System, Physiology of the blood and hemostasis; 2) General Physiology and Physiology of Respiratory System</p>		
<p>D4075, compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 2nd year, 1st semester</p>		
<p>Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)</p>		
<p>Teacher: Luciano DOMENICI (coordinator), Stefano DELLA LONGA</p>		
1	Course objectives	<p>The general objective of this Module is the systematic presentation of physiological concepts is the way to ensure appropriate depth and extent. It is essential that all medical and health professional students receive sufficient exposure to the physiological concepts that provide the foundations needed for further studies in pharmacology, pathology, pathophysiology, and medicine. The purpose of developing these core competency criteria is to provide guidelines for the breadth and depth of knowledge in the physiological principles and concepts that are considered minimal and essential for further progress in understanding mechanisms of disease and body defenses. The curricular objectives are focused primarily on normal body function. However, this material is presented in a context that prepares students for their roles as physicians and, accordingly clinical examples are used to illustrate the underlying physiological principles.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics and related Learning Outcomes of this Module are: We develop didactic mechanisms to assure that the students are being inculcated with physiological basic principles and concepts at appropriate depth of understanding. All of the objectives can be attained using multiple teaching formats; a final exam for each course will be the proof of learning. Progress exams are also planned during the course progress. During the course the faculty is continuously in contact with students also using internet to discuss doubts and unclear concepts illustrated during the course.</p> <p>Topics of the module include: I. General physiology 1. Functional organization of the human body and control of the 'internal environment. 2. Axonal transport, anterograde and retrograde flow. 3. The cell membrane. Transport across the cell membrane. 4. Generation of endogenous potentials; equation of Nerst for principal ions and leakage ion channels. Resting membrane potential and Goldman–Hodgkin–Katz equation to determine the voltage equilibrium across the membrane. 5. Membrane potentials: action potentials and voltage-dependent channels, partial and absolute refractory period. Conduction of action potentials, conduction velocity as a function of axon diameter and myelin sheathing. 6. Synapses; electric and chemical synapses. Chemical synapses: the process of neurotransmitter release, quantal theory, post-synaptic membrane and receptors, ionotropic and metabotropic receptors for neurotransmitters, post-synaptic responses in dendrites,</p>

	<p>spatial and temporal summation.</p> <p>7. Excitation of skeletal muscle: neuromuscular transmission and excitation-contraction coupling.</p> <p>8. Contraction of skeletal muscle.</p> <p>9. Contraction and excitation of smooth muscle.</p> <p><u>II. Respiratory system and Respiration</u></p> <p>1. Air flow in respiratory pathways: morphology and function of the upper airways, pharynx and larynx, different orders of bronchi, lung and alveolar cell types. Surface-tension reducing agents secreted by type II pneumocytes. Biophysics of air pressure, velocity and resistance.</p> <p>2. Pulmonary ventilation: volumes and pulmonary capacities measured by spirometer. Lung mechanics and mechanical ventilation: pulmonary compliance, static and dynamic lung mechanics, coupling of thorax-lung mechanical expansion and retraction. Intramural pressures and the intrapleural space. Resistance through the airways.</p> <p>3. Forced ventilation to distinguish obstructive and restrictive pathologies.</p> <p>4. Pulmonary circulation, pulmonary edema, pleural fluid.</p> <p>5. Respiration. Physical principles of gas exchange; diffusion of oxygen and carbon dioxide through the respiratory membrane.</p> <p>6. Respiration: transport of oxygen and carbon dioxide in blood and tissue fluids.</p> <p>7. Regulation of respiration by the nervous system and respiratory brain stem centers. Central detection of carbon dioxide and pH.</p> <p>8. Peripheral regulation of respiration: chemoreceptors to detect variations of oxygen, carbon dioxide and pH.</p> <p>9. Respiratory insufficiency - pathophysiology, diagnosis, oxygen therapy</p> <p>10. Aviation, high-altitude, and space physiology</p> <p>11. Physiology of deep-sea diving and other hyperbaric conditions.</p> <p><u>III. Blood cells and blood coagulation</u></p> <p>1. Red blood cells, anemia, and polycythemia. Composition of blood, difference between plasma and serum, hematocrit measurement.</p> <p>2. Resistance of the body to infection: leukocytes, granulocytes, the monocyte-macrophage system, and inflammation.</p> <p>3. Blood types and transfusion.</p> <p>4. Hemostasis and blood coagulation.</p> <p><u>IV The heart</u></p> <p>1. Cardiac muscle: the heart as a pump and function of the heart muscles.</p> <p>2. Rhythmical excitatory and conductive system of the heart, cardiac potentials and currents involved: generation of endogenous cardiac rhythm. Potentials generated by excitation of cardiomyocytes and underlying currents.</p> <p>3. The normal electrocardiogram.</p> <p>4. Electrocardiographic interpretation of cardiac muscle and coronary blood flow abnormalities: vectorial analysis.</p> <p>5. Cardiac contraction and the phases of cardiac cycle. Stroke and cardiac output. Tele-diastolic and systolic volume, the law of Frank-Starling.</p> <p><u>V. The circulation</u></p> <p>1. Overview of the circulation; medical biophysics of pressure, flow, resistance and compliance.</p> <p>2. Vascular distensibility and functions of the arterial and venous systems.</p> <p>3. Neuronal, humoral and local control of tissue flow in the tissues.</p> <p>4. The microcirculation: capillary fluid exchange in different tissue districts (diffusion and filtration process), interstitial fluid, and drainage.</p> <p>5. Lymphatic system, lymphatic drainage, lymph flow, lymphedema.</p> <p>6. Cardiac output, venous return, and their regulation.</p> <p>7. Rapid control of arterial pressure by baroreceptors.</p> <p>8. Local blood flow and its regulation: muscle blood flow and cardiac output during exercise, the coronary circulation and ischemic heart disease, cerebral blood flow, fetal circulation.</p> <p>9. Circulatory shock and physiology of its treatment.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of physiology ○ have knowledge and understanding of physiological basic concepts and principles ○ understand and explain physiological basic concepts and principles
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		o demonstrate skill in physiology and ability to illustrate physiological principles in the context of the medical school.
3	Prerequisites and learning activities	The student must know principles of Anatomy and histology, biochemistry
4	Teaching methods and language	Lectures, Meetings with faculty of other courses related to physiology Language: Italian and English Ref. Text books: - Conti F. et al., <i>Fisiologia medica</i> , Edi Ermes, Milano, 2010 - Guyton-Hall, <i>Fisiologia Medica</i> , 12 ed. Elsevier Milano, 2012 - Schmidt R.R., Thews G. <i>Human Physiology</i> , Springer-Verlag, 1989
5	Assessment methods and criteria	Oral examination

Programme of: "FISIOLOGIA UMANA II" "HUMAN PHYSIOLOGY II"		
This course is composed of three Modules: 1) Physiology of Nervous System I, Endocrine system and of kidney, 2) Physiology of Nervous System II, Physiology of the gastrointestinal system, 3) Course of Basic Life Support - Traineeship		
D4804, compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 2 nd year, 2 nd semester		
Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)		
1) PHYSIOLOGY OF NERVOUS SYSTEM I, ENDOCRINE SYSTEM AND OF KIDNEY (ECTS 5) 2) PHYSIOLOGY OF NERVOUS SYSTEM II, PHYSIOLOGY OF THE GASTROINTESTINAL SYSTEM (ECTS 3)		
Teachers: Eugenio SCARNATI (coordinator), Luciano DOMENICI		
1	Course objectives	The general objective of this Module is the study of the functions of human organs and systems as well as their regulation, coordination and control mechanisms. The student will know and understand the general concepts and functions of diverse body systems in humans, comprehend how systems functions are regulated, coordinated and controlled, conceive the physiology of human body as an integrated whole system, with diverse structures and systems coordinating with each-other.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of this Module include: I. The nervous system General principles and sensory physiology Neuronal circuits for processing information Somatic sensations Somatosensory integration Motor and integrative neurophysiology Spinal segmental control Supraspinal control Motor cortex Cerebellum Basal Ganglia Posture and locomotion Associative cortices The special senses Higher functions of the brain Behavioral neurophysiology States of brain activity II. The gastrointestinal system General principles of gastrointestinal function Motility and nervous control in the gastrointestinal tract Propulsion and mixing of food in the gastrointestinal tract Secretory functions of the gastrointestinal tract Digestion and absorption in the gastrointestinal tract

		<p><u>III. The endocrine system</u> Mechanisms of hormone secretion and coordination of body functions by chemical messengers Pituitary, thyroid and adrenocortical hormones The endocrine pancreas and glucose metabolism Parathyroid hormone, calcitonin and calcium and phosphate metabolism Reproductive and hormonal functions of the male Female physiology and pregnancy Fetal physiology</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of physiology o have knowledge and understanding of physiological basic concepts and principles o understand and explain physiological basic concepts and principles o demonstrate skill in physiology and ability to illustrate physiological principles in the context of the medical school.
3	Prerequisites and learning activities	The student must know principles of Anatomy, Histology, Embryology, Biochemistry and Physics
4	Teaching methods and language	Lectures, Meetings with faculty of other courses related to physiology Language: Italian and English Ref. Text books: <ul style="list-style-type: none"> - Conti F. et al., <i>Fisiologia medica</i>, Edi Ermes, Milano, 2010 - Guyton-Hall, <i>Fisiologia Medica</i>, 12 ed. Elsevier Milano, 2012 - Kandel E. et al., <i>Principles of Neural Science</i>. Mcgraw-Hill Publ.Comp., 2000 - Schmidt R.R., Thews G. <i>Human Physiology</i>, Springer-Verlag, 1989
5	Assessment methods and criteria	Oral examination at the end of the second semester.
3) COURSE OF BASIC LIFE SUPPORT TRAINEESHIP (1 ECTS)		
Teacher: Franco MARINANGELI		
1	Course objectives	This Module is the practical application of the Basic Life Support (BLS) and provides the students with the practical skills and abilities needed in their professional life. In this course, the students learn to recognize several life-threatening emergencies, provide CPR to victims of all ages, use an AED, and relieve choking in a safe, timely and effective manner.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: <ul style="list-style-type: none"> - Key changes in basic life support, reflecting the new science from the 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care - Critical concepts of high-quality CPR - The American Heart Association Chain of Survival - 1-Rescuer CPR and AED for adult, child and infant - 2-Rescuer CPR and AED for adult, child and infant - Differences between adult, child and infant rescue techniques - Bag-mask techniques for adult, child and infant - Rescue breathing for adult, child and infant - Relief of choking for adult, child and infant - CPR with an advanced airway Use of Automated External Defibrillator (AED) <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Learn the techniques of cardiopulmonary resuscitation. o Acquire basic knowledge about the chain of survival o Acquire basic knowledge about relief of choking o Be able to use the bag-mask technique o Be able to use the automated external defibrillator (AED) use.
3	Prerequisites and learning activities	No specific prerequisites are needed.
4	Teaching methods and language	Instructor led, team work and clinical practice Language: Italian Ref. Text Books:

		American Heart Association BLS Manual for Healthcare Providers, American Heart Association updated Guidelines
5	Assessment methods and criteria	Oral exam

<p style="text-align: center;">Programme of “PATOLOGIA GENERALE IMMUNOLOGIA” “GENERAL PATHOLOGY AND IMMUNOLOGY”</p> <p>This course is composed of four Modules: 1) Immunology and Immunopathology, 2) General Microbiology, 3) Introduction to the General Pathology, 4) Cellular Pathology</p>		
D3372, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 2nd year, 2nd semester		
Number of ECTS credits: 13 (total workload is 325 hours; 1 credit = 25 hours)		
1) IMMUNOLOGY AND IMMUNOPATHOLOGY (4 ECTS)		
Teacher: Maria Grazia CIFONE (coordinator)		
1	Course objectives	The objective of this Module is to provide the basis for a good understanding of the principles and functions of the immune system and the correlated immuno-pathology. The student will be able to understand the causes and the pathogenetic mechanisms of human diseases, and the etio-pathogenesis of the main alterations in structure and function of the body, including regulatory and compensatory mechanisms.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> -Organization of the immune system -B- cell and T-cell receptors -Antigens -Natural Killer cells <p>On successful completion of this module the student should have the knowledge and skills to:</p> <ul style="list-style-type: none"> o Describe how the immune system will respond to disease, cancer or pathogens; o Know and explain developmental aspects of immunity and potential immunotherapies; o Apply diagnostic reasoning to understanding disease states and their immunological cause; o Interpret experimental data on research in immunology; o Read the literature critically to assimilate views on new findings.
3	Prerequisites and learning activities	The student must know physiology, anatomy and biochemistry.
4	Teaching methods and language	<p>Lectures and team work</p> <p>Language: Italian and English</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Kumar V., Abbas A.K., Fausto N., Aster J.C., <i>Robbins e Cotran, Le basi patologiche delle malattie, Patologia generale</i>, Elsevier Masson, 2010 - Pontieri G.M., Russo M.A., Frati L., <i>Patologia generale</i>, Piccin, 2010 - Rubin E., Gorstein F., Rubin R., Schwartz R., Strayer D., <i>Patologia</i>, Casa Editrice Ambrosiana, 2006 - Stevens A., Lowe J., Scott I., <i>Patologia</i>, Casa Editrice Ambrosiana, 2009
5	Assessment methods and criteria	Written and Oral exam
2) GENERAL MICROBIOLOGY (5 ECTS)		
Teacher: Eugenio PONTIERI		
1	Course objectives	The course is intended to give the fundamentals of general microbiology. Safety concerning the biological risk is particularly outlined. Although memorization is an important part of any medical discipline, understanding the basic principles plays an important role in mastering microbiology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> -Fundamentals of prokaryotic cell structure and function -Cell wall structure -Laboratory equipment in bacteriology

		<ul style="list-style-type: none"> -Optical microscope -Microbial metabolism -Bacterial genetic -Sterilisation methods in bacteriology -Safety cabins -Biological hazard and safety methods -Microscopy of bacteria: staining techniques -Culture of bacteria, mould and yeast -Culture media -Natural and acquired immunity -Bacterial species with particular reference to Staphylococci, Streptococci, Pseudomonas, Candida Albicans, Helicobacter Pilory, Enterobacteria, Mycobacteria -Biofilm: dental plaque microbiology -Antibiotics and antibiotics sensitivity testing -Fundaments of virology -Viral species with particular reference to HBV, HCV, HIV, Flu viruses <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of the relevance of bacteria and viruses, o have knowledge and understanding of the arguments displayed in the module, o understand and explain the arguments of the module, o understand the relevance of microbiology in dental care, o demonstrate skill in focusing and ability to recognize the microbiological casualties, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know Biochemistry and Immunology
4	Teaching methods and language	<p>Lectures</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> - Murray P.R., Rosenthal K.S., Pfaller M.A., <i>Medical Microbiology</i>, EMSI 2008.
3) INTRODUCTION TO THE GENERAL PATHOLOGY (3 ECTS)		
Teacher: Andrew MACKAY		
1	Course objectives	The objective of this Module is to provide the basis for a good understanding of pathological processes. In particular, the student will acquire knowledge of the pathogenic mechanisms of disease and of the responses to biological damage.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> -General Pathology: -Alterations of cellular homeostasis -General etiology -Inflammation -Vascular, endothelial and emodynamic physiopathology -Angina pectoris -Stroke -Anemia -Neoplasia -Vascular diseases -Hepatic diseases <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of biological processes; o have knowledge and understanding of anatomic and physiological elements; o know the main pathogenic factors and their effects on living cells and tissues. o understand and explain how diseases occur; o demonstrate skill in biochemistry and biology and ability to recognize diseases' elements; o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know physiology, anatomy and biochemistry.
4	Teaching methods and language	<p>Lectures and team work</p> <p>Language: Italian and English</p>

		<p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Kumar V., Abbas A.K., Fausto N., Aster J.C., <i>Robbins e Cotran, Le basi patologiche delle malattie, Patologia generale</i>, Elsevier Masson, 2010. - Pontieri G.M., Russo M.A., Frati L., <i>Patologia generale</i>, Piccin, 2010 - Rubin E., Gorstein F., Rubin R., Schwartz R., Strayer D., <i>Patologia</i>, Casa Editrice Ambrosiana, 2006. - Stevens A., Lowe J., Scott I., <i>Patologia</i>, Casa Editrice Ambrosiana, 2009.
5	Assessment methods and criteria	Written and Oral exam
4) CELLULAR PATHOLOGY (1 ECTS)		
Teacher: Assunta Leda BIORDI		
1	Course objectives	The main objective of this Module is to give students an overall understanding of the fundamental biological mechanisms governing cellular response and the cellular events leading to diseases including cellular response to stress and/or noxious substances, cell injury and death. In addition, the differences between cell necrosis and apoptosis, the mechanisms of wound healing, disorders of cell growth and differentiation down to cancer formation will be considered.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Alterations of growth (atrophy, hyperplasia) and cell differentiation (Metaplasia, anaplasia) Mechanisms and morphology of cell injury: cloudy swelling, cell damage, ischemic stroke, ischemia and reperfusion, oxidative stress; Fatty degeneration or steatosis, alterations in intracellular accumulation (glycogen storage disease, etc.). Cell death. Necrosis and apoptosis. Temperature control and its alterations, hyperthermia and fever, hypothermia.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Describe the cellular response to stress and injury and the mechanisms involved in wound healing; o Describe the cellular adaptation mechanisms; o Know and explain the mechanisms leading to cell growth disorders and differentiation down to cancer formation; o Recognize pathogenesis of cell damage; o Read the literature critically to assimilate views on new findings.
3	Prerequisites and learning activities	The student must know physiology, anatomy and biochemistry.
4	Teaching methods and language	Lectures and team work Language: Italian and English Ref. Text Books: - Pontieri G.M., Russo M.A., Frati L., <i>Patologia generale</i> , Piccin, 2010
5	Assessment methods and criteria	Oral exam

Programme of “INFORMATICA MEDICA, STATISTICA BIOMEDICA ED INGLESE SCIENTIFICO” “MEDICAL INFORMATICS, BIOMEDICAL STATISTICS AND SCIENTIFIC ENGLISH”		
The course is composed of three Modules: 1) Medical Informatics, 2) Statistics and Clinical Research, 3) Scientific English		
D4801, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 2nd year, 2nd semester		
Number of ECTS credits: 12 (workload is 300 hours; 1 credit = 25 hours)		
1) MEDICAL INFORMATICS (3 ECTS)		
Teacher: Pierpaolo VITTORINI (coordinator)		
1	Course objectives	<p>This Module aims to enable the students</p> <ol style="list-style-type: none"> 1) To learn what is medical informatics and why computers are necessary in healthcare 2) To know what are the principal applications of informatics in healthcare 3) To know how informatics applies in medicine and healthcare

2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Coding systems in computer science and medicine - Introduction to algorithms and examples in computational epidemiology - Computer architectures and operating systems - Introduction to imaging - Networking Internet, telemedicine and PubMed - Conceptual and logical modelling of databases, queries and applications in health <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of what is medical informatics and why computers are necessary in healthcare; o understand and explain what are the principal concept and applications of informatics in healthcare o understand how informatics applies in medicine and healthcare
3	Prerequisites and learning activities	No prior knowledge of medical informatics is required as a prerequisite.
4	Teaching methods and language	Lectures, team work, exercises, home work Language: Italian Ref. Text Books: Vittorini P. <i>L'informatica per la medicina e la sanità pubblica</i> . 2009. Edizioni L'Una.
5	Assessment methods and criteria	Written exam

2) STATISTICS AND CLINICAL RESEARCH (3 ECTS)

Teacher: Antonella MATTEI		
1	Course objectives	Aim of this Module is the introduction to Statistical methods as syntax of the methodology of clinical research, highlightening the logical aspects.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Module Contents:</p> <ul style="list-style-type: none"> -Observational and experimental studies. -Statistical distributions. -Means and their properties. How to measure the variability. Normal distribution. -Rates and proportions, stressing the difference between prevalence ratio and incidence rate. -How to measure the strength of the association between two variables, especially referring to the relationship between exposition to a risk factor and presence of a disease. -Introduction to probability and its applications in Medicine. -Properties of the diagnostic tests. -Bayes theorem and its clinical applications. -Random sampling. -Basic concepts of the Statistical Inference: Parameter, estimator, standard error, confidence intervals, statistical tests. -Statistical methods in clinical studies with respect to the phase. Study protocol; endpoints; criteria of assessment of the patients; sample size and power of the study. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of experimental studies, o have knowledge and understanding of statistical distribution, o understand and explain statistical methods, o demonstrate skill in mathematics and ability to clinical research, o Be able to perform easy analyses of data, and interpret the obtained results, o Be able to control variability of the phenomena, in different fields of the Medicine o Demonstrate ability in critically reading the published results of a clinical study.
3	Prerequisites and learning activities	The student must know the basic notion of mathematical as acquired in the high schools.
4	Teaching methods and language	Recommended book - Ballatori E.: <i>Foundations of the Scientific Medicine</i> , Margiacchi-Galeno ed. Perugia, 2006.
5	Assessment methods and criteria	Written and oral exam.

3) SCIENTIFIC ENGLISH (6 ECTS)

Teacher: Linguistic Center of University		
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1	Course objectives	Objectives of the Module are to enable the students to read and understand scientific literature related to the field of study and to have a clear conversation with English speaking researchers.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: The main teaching methods of languages and the reading of scientific texts.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o be able to read and understand scientific texts; o be able to understand a conversation and summarise the content o be able to express complex concepts.
3	Prerequisites and learning activities	A2 level of language knowledge is required
4	Teaching methods and language	<p>Lectures, Exercises. Language: Italian Ref. Text Books: The course material consists, mainly, on scientific papers and books.</p>
5	Assessment methods and criteria	The exam is a written text following the usual assessment methods.

<p>Programme of “MEDICINA DI LABORATORIO E DIAGNOSTICA INTEGRATA” “MEDICAL LABORATORY AND INTEGRATED DIAGNOSTICS”</p>		
<p>This course is composed of four Modules: 1) Laboratory Methodologies, 2) Clinical Biochemistry, 3) Clinical Microbiology, 4) Clinical Pathology</p>		
<p>D0396, compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 3rd year, 1st semesterr</p>		
<p>Number of ECTS credits: 12 (total workload is 300 hours; 1 credit = 25 hours)</p>		
<p>1) LABORATORY METHODOLOGIES (3 ECTS)</p>		
<p>Teacher: Marco FERRARI (coordinator)</p>		
1	Course objectives	The goal of this module is to provide the students with: 1) basic notions on the main laboratory methodologies; 2) basic notions of non-invasive techniques and related instrumentation for molecular imaging, which is one of the most fascinating developments in medical diagnostics that can predict and diagnose disease earlier.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - The clinical chemistry laboratory. Fundamentals of the main methodologies: absorption spectroscopy, fluorescence, diffusion, reflectance, luminescence, electrophoresis, chromatography. - Principles on biosensors for "point of care applications". - Methods of Clinical Proteomics and Metabolomics. - Optical methods for non-invasive measurement of tissue and vascular oxygenation; "in vivo" and non-invasive biochemical investigations of brain and muscle disorders using magnetic resonance techniques . - Principles of molecular imaging. Techniques and tools used in molecular imaging: magnetic resonance imaging (MRI), functional magnetic resonance imaging (fMRI), magnetic resonance spectroscopy (MRS), positron emission tomography (PET)); single photon emission computed tomography (SPECT); optical imaging; radioisotope imaging; hybrid instrumentation (PET/computed tomography (CT), SPECT/CT, and PET/MRI). - The use of molecular imaging methods in preclinical and clinical research in particular in functional neuroimaging and imaging of tumors. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire profound knowledge of medical molecular imaging; o Understand and explain the meaning of statements related to molecular imaging using appropriate notation and language; o Demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know Human Biochemistry and Pathophysiology

4	Teaching methods and language	Lectures, homework Language: Italian, English Ref. Text books: The students will be provided with the Power Point slides of the lectures.
5	Assessment methods and criteria	Written exam
2) CLINICAL BIOCHEMISTRY (3 ECTS)		
Teacher: Ginafranco AMICOSANTE		
1	Course objectives	The goal of this module is to provide the students with the basic concepts of clinical biochemistry and laboratory medicine, providing a survey of basic techniques on clinical biochemistry.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Biological sample - Plasma proteins: general features and functions. Acute Phase Proteins - Monitoring and diagnosis of diabetes mellitus - Laboratory Medicine lipoprotein and Dyslipidemia. Lipid Metabolism - Clinical Enzymology: Role of enzymes in clinical diagnosis. Early markers and late markers - Creatine kinase (CK), lactic dehydrogenase (LDH), aspartate aminotransferase (AST) - Alkaline phosphatase and acid phosphatase. Non-enzymatic markers: myoglobin and troponin - Examination of chemical and physical urine - Blood gas analysis - Study of gonadal function - Monitoring of biochemical low-risk pregnancy - Therapeutic Drug Monitoring <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire profound knowledge of analytical procedures yielding accurate and precise information to aid in patient diagnosis o understand and explain the role of laboratory testing in health care. o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know Chemistry and Biochemistry
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: <ul style="list-style-type: none"> - Spandrio L., <i>Biochimica Clinica</i>, Casa Editrice Sorbona, 2000 - Zatti et al., <i>Medicina di Laboratorio</i>, Casa Editrice Idelson-Gnocchi, 2006 <p>Salerno C., <i>Appunti di Biochimica Clinica</i>, Casa Editrice SCRIPTA WEB (online purchase)</p>
5	Assessment methods and criteria	Written exam
3) CLINICAL MICROBIOLOGY (3 ECTS)		
Teacher: Anna Maria DI FABIO		
1	Course objectives	The goal of this module is to provide students with: 1) basic notions on the microbiological agents responsible for diseases transmissible to humans; 2) basic notions on the innate and acquired immune response against microbial agents
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Definition of infection and disease. - Host-parasite interaction - Major pathogens causing infections - Replicative strategies of the micro-organisms and their spread - Host defenses against infections - Fever of unknown origin (FUO) - Infections of the cardiovascular system (endocarditis) - The hepatitis viruses and other pathogens causing hepatitis - Infections host compromise

		<ul style="list-style-type: none"> - Nosocomial infections - Respiratory tract infections - Collection, sampling and microbiological aim of the clinical microbiological investigation <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Acquire profound knowledge of microorganisms causing human diseases o Have knowledge and understanding of the appropriateness of the laboratory diagnostic tests required for diagnosis o Demonstrate ability to evaluate the results from diagnostic hypotheses and laboratory tests to confirm or rule out diseases o Demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	Students must have knowledge of Basic Microbiology and Clinical Immunology
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: - Favalli C., Oliva B., <i>Microbiologia clinica</i> - EMSI Editore, 2006
5	Assessment methods and criteria	Written/Oral exam
4) CLINICAL PATHOLOGY (3 ECTS)		
Teacher: Vincenza DOLO		
1	Course objectives	The goal of this module is to provide the students with the basic concepts of clinical pathology and laboratory medicine, providing a survey of basic techniques on manipulating human blood samples.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Complete blood count, CBC: - WBC, RDC, PL - Serum protein electrophoretic pathological pattern - Tumor pathology - Tumor markers for clinical use, - Practical venous sampling <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of analytical procedures used in a Clinical Laboratory o understand and explain pathophysiology of diseases o demonstrate skill and ability to to manipulate human samples o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know Human Biochemistry and Pathophysiology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: - Henry J.B., McPherson R.A., Pincus M., <i>Henry's Diagnosi Clinica e Metodi Di Laboratorio</i> , Antonio Delfino Editore, 2010
5	Assessment methods and criteria	Oral exam

<p>Programme of “FISIOPATOLOGIA GENERALE E PATOLOGIA MOLECOLARE” “GENERAL PHYSIOPATHOLOGY AND MOLECULAR PATHOLOGY”</p> <p>This course is composed of four Modules: 1) General and Special Physiopathology, 2) Physiopathology of endocrine system and Physiopathology of Metabolism, 3) Pathogenetic basis of cancer 1, 4) Pathogenetic basis of cancer 2</p> <p>D4800, compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 3rd year, 1st semesterr</p> <p style="text-align: center;">Number of ECTS credits: 7 (total workload is 175 hours; 1 credit = 25 hours)</p> <p>Teacher: Mauro BOLOGNA (coordinator)</p>

1	Course objectives	The objective of this course is to offer to the students extended and updated concepts of physiopathology and molecular pathology. On successful completion of this module, the student should be able to elaborate complex logical reasoning on the main mechanisms of disease, of the interplay between different functions and organs in normal and pathologic processes with particular emphasis on the prevention of the most prevalent diseases and the understanding of diagnostic and therapeutic principles of disease.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: History of Pathology and of Experimental Medicine. Basic physiopathological mechanisms of the main organs and apparatuses. Diseases of the cardiovascular system, of the pulmonary system, of the gastrointestinal system, of the urinary system. (including acute and chronic respiratory and renal failures) . The endocrine system and the basis of endocrine dysfunction (primary and secondary syndromes of hyper- and hypo-function in endocrinology, concepts of hormone resistance). Metabolic diseases. The metabolic syndrome, insulin resistance in diabetes and obesity. Mechanisms and complications of acidosis and alkalosis. Alterations in water and sodium homeostasis (hyper- and hypo-natremia, abnormalities in intracellular and extracellular hydration). Hyper- and hypo-kaliemia. Immunopathology. Clinical aspects of the most prevalent tumoral diseases. Tumour prevention and early detection. Social, nutritional, biological and environmental prevention of the most prevalent human diseases, acute and chronic.</p> <p>Biology of cancer, with historical highlights. Molecular biology of cancer: pathogenesis and progression. Cancer epidemiology. Neoplastic cell morphology. Control and alterations of cell proliferation. Tumor classification criteria. Hereditary tumors. Leukemias and lymphomas. Detailed molecular analysis of: oncogenes, onco-suppressors, microRNAs, tumour-associated angiogenesis, metastatic dissemination, apoptosis, epithelial to mesenchymal transition, tumour invasion and motility, tumour evasion of host immunological defences, organ specific metastasis, tumour stem cells, tumour dormancy.</p> <p>On successful completion of this module the medical student should:</p> <ul style="list-style-type: none"> o have extensive and updated knowledge of pathology at the theoretical and experimental level, with clinical elements of diagnosis and therapy principles; o have knowledge and understanding of the principal physiopathological mechanisms of disease; o be able to explain the major processes underlying the altered functions evident in human diseases using appropriate scientific language; o demonstrate capacity for reading and understand other texts on related topics. o demonstrate interest to health, well-being and safety; o demonstrate ability to communicate key information from the Pathology field to non-experts. o be able to apply and transmit the fundamentals of disease prevention, with particular attention to chronic diseases and cancer.
3	Prerequisites and learning activities	The student must know the basic notions of Biochemistry, Physiology, Immunology and General Pathology.
4	Teaching methods and language	Lectures. Language: Italian. Some themes are illustrated in English with translation and comment of selected synopses of disease descriptions on appropriate publications (provided to all students by the teachers). The course, on request, can be delivered in English by the teachers. Ref. Text books: - Pontieri G.M., Russo M.A., Frati L., <i>Patologia Generale</i> , Tomi I e II, Piccin Padova, 3ed. 2008 - Robbins & Cotran: <i>Le Basi Patologiche Delle Malattie, Patologia Generale</i> , VIII Ed., Elsevier Italia, 2010 Selected synopses of disease descriptions in English (from International journals, selected and provided by the teachers).
5	Assessment methods and criteria	Computer test with randomly chosen multiple response questions (also providing revision suggestions), administered some days before the Oral exam, composed of four partial (oral or written) tests. Scores are expressed in numbers, from "sufficient" (18/30) up to "outstanding" (30/30 cum laude), taking into account all the partial and final tests.
Programme of "SEMETIOTICA E METODOLOGIA CLINICA"		

“SEMEIOTICS AND CLINICAL METHODOLOGY”		
<p>This course is composed of nine Modules: 1) Epidemiological Methodology, 2) Medical Semeiotics: general and Clinical Methodology, 3) Medical Semeiotics: Respiratory System, 4) Medical Semeiotics: Cardiovascular System, 5) Medical Semeiotics: physics and functional liver, 6) Medical Semeiotics: general and Clinical Methodology Traineeship, 7) Surgical Semeiotics: general, anatomical regions, the study of tumefactions, 8) Surgical Semeiotics: general examination of individual organs and systems, 9) Surgical Semeiotics: general, anatomical regions, the study of tumefactions Traineeship</p>		
<p>D0392, compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 3rd year, 1st semester</p>		
<p>Number of ECTS credits: 13 (total workload is 325 hours; 1 credit = 25 hours)</p>		
<p>1) EPIDEMIOLOGICAL METHODOLOGY (3 ECTS)</p>		
<p>Teacher: Stefano NECOZIONE (coordinator)</p>		
1	Course objectives	<p>The goal of this module is to allow students to know and understand epidemiological methods to evaluate effectiveness of health interventions, epidemiological study designs and their relationship to the research questions (etiology, diagnosis, prognosis, effectiveness) and contribution of epidemiological methods to clinical reasoning and decision-making in health care.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - <u>The characteristics of the epidemiological approach</u>: epidemiology, clinical epidemiology and evidence based medicine - <u>Health and disease</u>: natural history and patterns of disease, prevention and therapy, individual and populations - <u>Frequency of illness</u>: cross-sectional studies, frequency measurements, interpretation of the indicators - <u>Risk</u>: risk factors, case-control studies, cohort studies, causality criteria, measures of association, bias and confounding - <u>Diagnosis</u>: variability and criteria of abnormality, validity and reproducibility of diagnostic testing, predictive values, early diagnosis and screening - <u>Treatment</u>: methodological aspects of clinical trials; epidemiological and clinical interpretation of the results - <u>Prognosis</u>: clinical course and prognosis, prognosis and survival analysis - <u>Decision</u>: Clinical reasoning and decision analysis, synthesis of knowledge and meta-analysis, critical reading of scientific articles and updating of knowledge <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire profound knowledge of the determinant factors of health and disease; o Understand and explain the fundamental means to prevent the main infectious and non-infectious diseases; o Recognizes the critical elements of clinical reasoning and assess the methodological tools provided by epidemiology o Demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	<p>The student must know Human Biochemistry and Pathophysiology</p>
4	Teaching methods and language	<p>Lectures, team work, exercises, home work, reports Language: Italian Ref. Text books:</p> <ul style="list-style-type: none"> - Di Orio F. <i>Metodologia epidemiologica clinica</i>. Piccin editore, 1994 - Morabia A. <i>L'epidemiologia clinica</i>. Il Pensiero Scientifico editore, 1999
5	Assessment methods and criteria	<p>Written and oral exam</p>
<p>2) MEDICAL SEMEIOTICS: GENERAL AND CLINICAL METHODOLOGY (ECTS=1)</p> <p>3) MEDICAL SEMEIOTICS: RESPIRATORY SYSTEM (ECTS=1)</p> <p>4) MEDICAL SEMEIOTICS: CARDIOVASCULAR SYSTEM (ECTS=1)</p> <p>5) MEDICAL SEMEIOTICS: PHYSICS AND FUNCTIONAL LIVER (ECTS=1)</p>		
<p>Teachers: Claudio FERRI, Giuliana PROPERZI, Giovambattista DESIDERI, Ivano TESTA</p>		

1	Course objectives	The goal of this module is to provide the students to perform a complete physical examination, detect and interpret pathophysiological conditions, evaluating the main symptoms and signs (from Semeion=sign) of disease, using standardized techniques and procedures (clinical skills), to collect the a thorough patient-oriented problems and starting with the reason for the referral, identifying the active clinical problems versus inactive, identifying the relationships between events, providing an interpretation based on interpretation of the main indices of laboratory related to several large groups of diseases (markers of infectious diseases, inflammation, cancer, cardiovascular, immunological). Also acquire the basic knowledge of the diagnostic instrument to be used in the diagnostic process.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Medical Semeiotic and (Clinical) Methodology of the body, with the evaluation of the patient using the reading and interpretation of symptoms and signs. From the appraisal of General Clinical Examination, students will be taught how to perform physical examination of the head and neck, cardiovascular, respiratory and gastro enteric systems as well as the kidney, urinary tract and skin apparatus. Clinical evaluation will be integrated with the main methods of functional and instrumental study of the following organs and apparatus: cardiovascular, respiratory, thyroid, breast, oesophagus, stomach, small and large bowel, liver and biliary tract, pancreas, kidney and urinary tract, arteries and veins.</p> <ol style="list-style-type: none"> 1. History and physical examination 2. Principles of Diagnostic Imaging and Information 3. Topographic Division of the chest 4. Respiratory system 5. Heart and Cardiovascular system 6. Abdomen 7. Metabolic Diseases 8. Endocrine System 9. Locomotor system 10. Blood 11. Nervous System <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of basic symptoms and signs in clinical Medicine o have knowledge and understanding physical examination in the main clinical cases o understand and explain clinical signs and symptoms and interpretation of the main indices of laboratory related to several large groups of diseases o demonstrate skill in in selecting laboratory testing and instrumental investigations for the correct diagnosis and identification of the specific disease and ability to methodological process to arrive at the correct diagnosis o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know basic anatomy, physiology and pathophysiological notions, contained in the exams of anatomy and physiology
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: <ul style="list-style-type: none"> - Nuti R., Caniggia A., <i>Metodologia clinica</i>, Minerva medica, 2002 - Tarquini B., Il nuovo Rasario. <i>Semeiotica e metodologia medica</i>. XVIII edizione, Idelson, 2005 - Harrison's, <i>Principles of Internal Medicine</i>, McGraw Hill, XIV edizione. Rugarli C., <i>Medicina Interna Sistematica 6°Edizione</i>, 2012
5	Assessment methods and criteria	Oral exam
6) MEDICAL SEMEIOTICS: GENERAL AND CLINICAL METHODOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Claudio Ferri		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of medical semeiotics.

2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Students will be taught how to perform physical examination of the head and neck, cardiovascular, respiratory and gastro enteric systems as well as the kidney, urinary tract and skin apparatus.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of physical examination ○ Acquire basic knowledge of symptoms and signs in the main clinical cases ○ Acquire basic knowledge in selecting laboratory testing and instrumental investigations for the correct diagnosis and identification of the specific disease
3	Prerequisites and learning activities	The student must know basic anatomy, physiology and pathophysiological notions, contained in the exams of anatomy and physiology.
4	Teaching methods and language	<p>Team work and clinical practice Language: Italian Ref. Text Books:</p> <ul style="list-style-type: none"> - Nuti R., Caniggia A., <i>Metodologia clinica</i>, Minerva medica, 2002 - Tarquini B., Il nuovo Rasario. <i>Semeiotica e metodologia medica</i>. XVIII edizione, Idelson, 2005 - Harrison's, <i>Principles of Internal Medicine</i>, McGraw Hill, XIV edizione. Rugarli C., <i>Medicina Interna Sistemica</i> 6° Edizione, 2012
5	Assessment methods and criteria	Oral exam
<p>7) SURGICAL SEMIOTICS: GENERAL, ANATOMICAL REGIONS, THE STUDY OF TUMEFACIONS (1 ECTS)</p> <p>8) SURGICAL SEMEIOTICS: GENERAL EXAMINATION OF INDIVIDUAL ORGANS AND SYSTEMS (1 ECTS)</p>		
Teachers: Mario SCHIETROMA, Renato PIETROLETTI		
1	Course objectives	The main objective of this course is to provide the students with basic knowledge of symptoms of surgical interest, to provide the skills for correct physical examination of the surgical patient in relation to his main complaints and to select the most appropriate laboratory test and instrumental examination. On successful completion of this module, the student should be able to recognize the diagnostic approach to the most common surgical clinical symptoms.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Abdominal pain and its pathophysiology, intestinal obstruction, digestive bleeding - high and low, obstructive jaundice, inguinal testicular or lump, thyroid diseases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of basic symptoms in surgical patients ○ have knowledge and understanding physical examination in the main surgical syndromes ○ understand and explain laboratory testing and instrumental investigations for the correct identification the underlying disease ○ demonstrate skill in selecting laboratory testing and instrumental investigations for the correct identification the underlying disease ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know the basic anatomy and physiology of notions, contained in the exams of anatomy and physiology
4	Teaching methods and language	<p>Lectures Language: Italian Ref. Text books:</p> <ul style="list-style-type: none"> - Dionigi R., <i>Chirurgia</i>, Elsevier, 2011 - <i>Sabiston Textbook of Surgery</i>, Saunders, 18th edition
5	Assessment methods and criteria	Oral exam
<p>9) SURGICAL SEMIOTICS: GENERAL, ANATOMICAL REGIONS, THE STUDY OF TUMEFACIONS TRAINEESHIP (1 ECTS)</p>		
Teacher: Mario SCHIETROMA		

1	Course objectives	This Module is the practical application of the theoretical concepts of Module 7) of which constitutes an integral part. The goal of this module is to allow students to do basic surgical handling.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Clinical examination of patient; - Aseptic procedures; - The operating room; - Skin suture with stitches; - Suture removal. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Have knowledge of basic technique of surgery; o Demonstrate technical skills o Demonstrate ability to know what to use, when to use nit and for how long.
3	Prerequisites and learning activities	The student must know human anatomy, physiology, and pathophysiology.
4	Teaching methods and language	<p>Team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Dionigi R., <i>Chirurgia</i>, Elsevier, 2011 - <i>Sabiston Textbook of Surgery</i>, Saunders, 18th edition
5	Assessment methods and criteria	Oral exam

Programme of "ANATOMIA PATOLOGICA" "PATHOLOGICAL ANATOMY"		
D3346, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 3rd year, 2nd semester		
Number of ECTS credits: 5 (total workload is 125 hours; 1 credit = 25 hours)		
Teacher: Pietro LEOCATA		
1	Course objectives	Objective of the course is to provide students with knowledge of the most common general pathologic processes, their microscopic and macroscopic characteristics. The students will know the role of pathology in diagnostics of various non-oncological and oncological processes employing morphologic techniques (biopsies, surgical material and autopsies).
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of this Module include:</p> <ul style="list-style-type: none"> -Oral cavity: Tumors and precancerous lesions; -Salivary glands: Tumors -Esophagus: Esophagitis, Barrett esophagus, Tumors -Stomach: Gastritis, Gastric ulceration, Gastric cancer -Small intestine and colon: Ischemic bowel disease, malabsorption, Inflammatory bowel disease, Diverticulitis, Polyps, Colorectal carcinoma -Liver: Hepatic failure, Hepatitis, Cirrhosis, Tumors -Biliary tract: Intrahepatic biliary tract disease, Disorders of the extrahepatic bile ducts -Pancreas: Pancreatitis, Tumors -Anemias, Lymphomas, Leukemias -Endocrine disorders <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have acquired knowledge of microscopic diagnostics of general pathologic processes and clinical practice in the study of macroscopic lesions of organs, o demonstrate knowledge and understanding of anatomic and pathological elements, o understand and explain the morphogenesis of human pathologies, their sequels and complications, o be able to diagnose pathologies of organs according to their macroscopic changes, o be able to analyse the basic microscopical changes of general pathologic processes in tissues, o demonstrate capacity to read and understand other texts for the enhancement of the knowledge in view of their professional practice

3	Prerequisites and learning activities	The student must have previous knowledge in general pathology, physiology, anatomy.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: - Robbins & Cotran, " <i>Pathologic basis of disease</i> " (<i>Le basi patologiche delle malattie</i>), Kumar, Abbas, Fausto editors, 8th Edition, Elsevier, Philadelphia, 2010.
5	Assessment methods and criteria	Oral exam

Programme of "MEDICINA INTERNA, ENDOCRINOLOGIA, IMMUNOLOGIA CLINICA E MALATTIE INFETTIVE"		
"INTERNAL MEDICINE, ENDOCRINOLOGY, CLINICAL IMMUNOLOGY AND INFECTIOUS DISEASES"		
This course is composed of twelve Modules: 1) Infectious and tropical diseases, 2) Infectious and tropical diseases Traineeship, 3) Allergology, 4) Diseases of the respiratory system, 5) Diseases of the kidney and of the cardiovascular system, 6) Diseases of the kidney and of the cardiovascular system Traineeship, 7) Diseases of the liver and of the digestive system, 8) Endocrine System Diseases, 9) Metabolic Diseases, 10) Endocrine System Diseases Traineeship, 11) Clinical Immunology, 12) Clinical Immunology Traineeship		
D4069, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 3rd year, 2nd semester		
Number of ECTS credits: 13 (workload is 325 hours; 1 credit = 25 hours)		
1) INFECTIOUS AND TROPICAL DISEASES (2 ECTS)		
Teacher: Alessandro GRIMALDI		
1	Course objectives	The course aim to provide the students with theoretical knowledge and practical skills for the correct application of infectious disease preventive and healing measures in their professional life. They will also learn the symptoms and clinical evidence of systemic and viral diseases and the correct approach in serious cases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Tuberculosis, meningitis, endocarditis, Antibiotic therapy, AIDS, Viral Hepatitis, Infections of the immunosuppressed patient, haemorrhagic fevers. At the end of the course the student should: o Know the high risks of acquiring infectious diseases connected with frequent exposure to blood and body fluids, o Know and understand the infection control measures for reducing the patients' risk of being infected, o Know and understand the routes of disease transmission: blood borne diseases, airborne diseases and through other fomites, o Know and understand the new and emerging diseases with serious public health consequences of morbidity and mortality, o Be able to apply the different and varied disease control measures for ✓ bloodborne diseases (hepatitis A,B,E,C,D,G, HIV), ✓ airborne diseases (tuberculosis, influenza, SARS, AH1N1, immunizable childhood diseases), o be able to utilize disease screening and post-exposure control measures, o know and use standard precautions and be able to recognize situations in need of additional precautions.
3	Prerequisites and learning activities	The student must know pathology and physiology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: Harrison, <i>Medicina Interna-Malattie Infettive</i> , Mac Graw-Hill, 2012 Moroni, Esposito, Antinori, <i>Malattie Infettive</i> , Edra – Masson, 2014 Root KR et al. <i>Clinical Infectious Disease</i> , Oxford University Press, 1999

5	Assessment methods and criteria	Written exam
2) INFECTIOUS AND TROPICAL DISEASES TRAINEESHIP (2 ECTS)		
Teacher: Alessandro GRIMALDI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Infectious Diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - chronic hepatitis B and hepatitis C virus infections, hepatitis B and hepatitis C virus cirrhosis and hepatocarcinoma - opportunistic infections in AIDS - infectious diseases correlated to immunodepression and immunosuppression - nosocomial infections. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of diagnostic ultrasound echography o Acquire basic knowledge on elastography o Acquire basic knowledge on liver biopsies
3	Prerequisites and learning activities	The student must know pathology and physiology.
4	Teaching methods and language	<p>Clinical cases, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <p>Harrison, <i>Medicina Interna-Malattie Infettive</i>, Mac Graw-Hill, 2012</p> <p>Moroni, Esposito, Antinori, <i>Malattie Infettive</i>, Edra – Masson, 2014</p> <p>Root KR et al. <i>Clinical Infectious Disease</i>, Oxford University Press, 1999</p>
5	Assessment methods and criteria	Oral exam
3) ALLERGOLOGY (1 ECTS)		
Teacher: Lia GINALDI		
1	Course objectives	The goal of this module is to provide the students with theoretical knowledge and practical skills for the correct clinical approach to the different allergological diseases
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Anaphylaxis and anaphylactic shock</p> <p>Allergic rhinitis and allergic oculorhinitis</p> <p>Allergic bronchial asthma</p> <p>Allergies and intolerances to foods and drugs</p> <p>Hives and contact dermatitis</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of the physiopathology of allergy o have knowledge and understanding of clinical pictures and symptoms of the main allergic manifestations o understand and explain the pathogenetic mechanisms, findings and complications of allergies demonstrate skill in recognizing symptoms and signs of both localized and systemic allergic reactions and ability to apply idoneous diagnostic procedures and treatment options o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know physiology and pathology.
4	Teaching methods and language	<p>Lectures</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> - Harrison, <i>Reumatologia e Immunologia Clinica</i>, Mac Graw-Hill - Joo S., <i>The Washington Manual Allergy - Asthma and Immunology Subspecialty</i>, Lippincott Williams, 2012 - Spickett G., <i>Oxford Handbook of Clinical Immunology and Allergy</i>, Oxford University Press, 2013

5	Assessment methods and criteria	Written exam
4) DISEASES OF THE RESPIRATORY SYSTEM (1 ECTS) and 5) DISEASES OF THE KIDNEY AND OF THE CARDIOVASCULAR SYSTEM (1 ECTS)		
Teacher: Claudio FERRI (coordinator)		
1	Course objectives	The goal of this module is to provide the students with theoretical knowledge and practical skills for the correct clinical approach to the diseases of respiratory and cardiovascular systems and of the kidney.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Pathophysiology, physical symptomatology, instrumental and laboratory investigations, prevention and medical treatment of the diseases of respiratory and cardiovascular systems. Pathophysiology, physical symptomatology, instrumental and laboratory investigations, prevention and medical therapy of immune-mediated and non-immune-mediated kidney diseases.</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have profound knowledge of physiopathology of the diseases of respiratory and cardiovascular systems and of the kidney ○ have knowledge and understanding of clinical pictures and symptoms of the main manifestations of the diseases of respiratory and cardiovascular systems and of the kidney ○ understand and explain the pathogenetic mechanisms, findings and complications of the diseases of respiratory and cardiovascular systems and of the kidney ○ demonstrate skill in recognizing symptoms and signs of these clinical conditions and ability to apply idoneous diagnostic procedures and treatment options ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know physiology and pathology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: - Harrison, <i>Principi di Medicina Interna</i> , Mac Graw-Hill, 2012
5	Assessment methods and criteria	Oral exam
6) DISEASES OF THE KIDNEY AND OF THE CARDIOVASCULAR SYSTEM TRAINEESHIP (1 ECTS)		
Teacher: Claudio FERRI (Coordinator)		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 5) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of diseases of the kidney and of the cardiovascular system.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Clinical evaluation of patients - Differential diagnosis for the main diseases of cardiovascular system and of the kidney - Diagnostic approach - Clinical management of the main diseases of cardiovascular system and of the kidney <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of clinical evaluation ○ Acquire basic knowledge on clinical manifestations of the main diseases of cardiovascular system and of the kidney ○ Acquire basic knowledge on the clinical management of the main diseases of cardiovascular system and of the kidney
3	Prerequisites and learning activities	The student must know physiology and pathology.
4	Teaching methods and language	Team work and clinical practice Language: Italian

		Ref. Text Books: Harrison, Principi di Medicina Interna, Mac Graw-Hill, 2012
5	Assessment methods and criteria	Oral exam
7) DISEASES OF THE LIVER AND OF THE DIGESTIVE SYSTEM (1 ECTS)		
Teacher: Giovambattista DESIDERI		
1	Course objectives	The goal of this module is to provide the students with theoretical knowledge and practical skills for the correct clinical approach to the diseases of the liver and digestive system.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Pathophysiology, physical symptomatology, instrumental and laboratory investigations, prevention and medical treatment of the diseases of the liver and digestive system.</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have knowledge and understanding of clinical pictures and symptoms of the main manifestations of the diseases of the liver and digestive system ○ understand and explain the pathogenetic mechanisms, findings and complications of the liver and digestive system ○ demonstrate skill in recognizing symptoms and signs of these clinical conditions and ability to apply idoneous diagnostic procedures and treatment options. ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know physiology and pathology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: - Harrison, <i>Principi di Medicina Interna</i> , Mac Graw-Hill, 2012
5	Assessment methods and criteria	Oral exam
8-9) ENDOCRINE AND METABOLIC DISEASES (2 ECTS)		
Teacher: Sandro FRANCAVILLA, Felice FRANCAVILLA		
1	Course objectives	The goal of these modules is to provide the knowledge of etiology, physiopathology, clinical picture, diagnostic approach treatment options of endocrine and metabolic diseases
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Diseases of hypothalamus/pituitary (hypopituitarism, hyperprolactinemia, gigantism and acromegaly, diabetes insipidus); Diseases of thyroid (goiter, hypo- and hyperthyroidism, thyroiditis, thyroid nodules and neoplasms); Diseases of adrenal gland (hypercortisolism, primary hyperaldosteronism, adrenal hyperandrogenism, adrenal insufficiency, pheochromocytoma and other neuroendocrine neoplasms); Disorders of calcium phosphorus homeostasis (parathyroid diseases and osteoporosis); Diabetes mellitus; Dyslipidemia</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ Acquire profound knowledge of etiology, physiopathology and clinical picture of the main endocrine and metabolic pathologies; ○ Acquire knowledge and understanding of their diagnostic approach and treatment options; ○ Demonstrate skills in recognizing symptoms and signs of endocrine and metabolic pathologies; ○ Demonstrate skills in interpreting laboratory and instrumental data inherent to endocrine and metabolic pathologies; ○ Understand and explain the meaning of statements using appropriate notation and language; ○ Demonstrate capacity to continue learning by understand other texts on related topics.
3	Prerequisites and learning activities	The student must know Human Anatomy, Biochemistry and Human Physiology
4	Teaching methods and language	Frontal lectures; seminars; team work; exercises, tutorials; home work Language: Italian Ref. Text books:

		<ul style="list-style-type: none"> - Camanni F., Ghigo E. <i>Malattie del sistema endocrino e del metabolismo</i>. Edi. Ermes, 2012 - Harrison, <i>Principi di Medicina Interna</i>, Mac Graw-Hill, 2012
5	Assessment methods and criteria	Oral exam
10) ENDOCRINE AND METABOLIC DISEASES TRAINEESHIP (1 ECTS)		
Teacher: Sandro FRANCAVILLA, Felice FRANCAVILLA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 8) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of endocrine and metabolic diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Medical examination of outpatients with endocrine/metabolic diseases; - Evaluation of laboratory and instrumental data from patients with endocrine and metabolic diseases; - Thyroid ultrasonography <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire knowledge and understanding of diagnostic approach to patients with endocrine/metabolic disease o Demonstrate skills in recognizing symptoms and signs of endocrine and metabolic pathologies; o Demonstrate skills in interpreting laboratory and instrumental data inherent to endocrine and metabolic disease; o Learn the techniques of thyroid ultrasonography
3	Prerequisites and learning activities	The student must know physiology and physiopathology of endocrine system
4	Teaching methods and language	<p>Team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> - Camanni F., Ghigo E. <i>Malattie del sistema endocrino e del metabolismo</i>. Edi. Ermes, 2012 - Harrison, <i>Principi di Medicina Interna</i>, Mac Graw-Hill, 2012
5	Assessment methods and criteria	Oral exam
11) CLINICAL IMMUNOLOGY (1 ECTS)		
Teacher: Massimo Maria Marcello DE MARTINIS		
1	Course objectives	The goal of this module is to provide the students with: with the knowledge of physiopathology, findings, diagnostic tools and treatment options of autoimmunity, inflammatory diseases and immunodeficiencies.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Pathophysiology and nosographia of the Immune System Diseases</p> <p>Immunological aspects of diseases of the various organs and systems: Clinical Immunology, as a multidisciplinary interaction</p> <p>Autoimmune disease, systemic lupus erythematosus and antiphospholipid antibody syndrome</p> <p>Connective tissue, arthritis and chronic inflammatory diseases</p> <p>Vasculitis and polymyalgia rheumatica</p> <p>Main immunodeficiencies and immunosenescence</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of collagenopathies, rheumatic diseases, organ and systemic autoimmune pathologies o have knowledge and understanding of the main conditions leading to immunological derangement and its consequences o understand and explain the mechanisms underlying the clinical findings and evolution of autoimmune diseases and inflammation o demonstrate skill in the diagnostic approach and ability to critically address the different therapeutic targets and treatment options

		o demonstrate capacity to continue learning and understand other texts on related topics
3	Prerequisites and learning activities	The student must know physiology and pathology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: - Harrison, <i>Reumatologia e Immunologia Clinica</i> , Mac Graw-Hill - Joo S., <i>The Washington Manual Allergy - Asthma and Immunology Subspecialty</i> , Lippincott Williams, 2012 - Spickett G., <i>Oxford Handbook of Clinical Immunology and Allergy</i> , Oxford University Press, 2013
5	Assessment methods and criteria	Written exam
12) CLINICAL IMMUNOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Massimo Maria Marcello DE MARTINIS		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 11) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Clinical Immunology.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Discussion of case studies and activities at bedside - Fundamentals of laboratory diagnostics in Clinical Immunology - Fundamentals of imaging diagnostics in Clinical Immunology On successful completion of this module, the student should o Acquire basic knowledge to adequately collect the history of the patients and to identify relevant clinical features by medical examination in immunology and autoimmune diseases. o Acquire basic knowledge to the appropriate use of laboratory tests in clinical immunology. o Acquire basic knowledge to identify appropriate management strategies and treatment options o Develop the ability to cope with the exponential growth of scientific information in the field by identifying the link between clinical events and major molecular events that drive the pathogenesis of diseases of the immune system.
3	Prerequisites and learning activities	The student must know fundamentals of physiology and pathology of the immune system
4	Teaching methods and language	Team work and clinical practice Language: Italian Ref. Text Books: - Harrison, <i>Reumatologia e Immunologia Clinica</i> , Mac Graw-Hill - Joo S., <i>The Washington Manual Allergy - Asthma and Immunology Subspecialty</i> , Lippincott Williams, 2012 Spickett G., <i>Oxford Handbook of Clinical Immunology and Allergy</i> , Oxford University Press, 2013
5	Assessment methods and criteria	Written exam

Programme of "ANATOMIA PATOLOGICA II" "PATHOLOGICAL ANATOMY II"		
D4330, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 4 th year, 1 st semester		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
Teacher: Pietro LEOCATA, Stefania DISCEPOLI		
1	Course objectives	Objective of the course is to provide students with knowledge of the most common general pathologic processes, their microscopic and macroscopic characteristics. The students will know the role of pathology in diagnostics of various non-oncological and oncological

		processes employing morphologic techniques (biopsies, surgical material and autopsies).
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of this Module include:</p> <ul style="list-style-type: none"> - Blood vessels: Arteriosclerosis, Aneurysms and Dissection - Heart: Ischemic heart disease, Ischemic heart disease, Myocardial infarction, Cardiomyopathies, Pericarditis - Lung: Pulmonary infections, Tuberculosis, Pneumonia, Tumors - Kidney: Glomerular disease, Tubular and Interstitial diseases, Uremia, Tumors - Urinary tract infections - Breast: Benign lesions, Carcinoma - Female genital tract: Premalignant and Malignant neoplasms of the cervix, Malignant tumors of the uterus, Ovarian tumors - Male genital system: Prostate tumors - Central nervous system: Cerebrovascular diseases, Tumors - Bones: Tumors <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have acquired knowledge of microscopic diagnostics of general pathologic processes and clinical practice in the study of macroscopic lesions of organs, o demonstrate knowledge and understanding of anatomic and pathological elements, o understand and explain the morphogenesis of human pathologies, their sequels and complications, o be able to diagnose pathologies of organs according to their macroscopic changes, o be able to analyse the basic microscopical changes of general pathologic processes in tissues, o demonstrate capacity to read and understand other texts for the enhancement of the knowledge in view of their professional practice
3	Prerequisites and learning activities	The student must have previous knowledge in general pathology, physiology, anatomy.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: <ul style="list-style-type: none"> - Robbins & Cotran, "<i>Pathologic basis of disease</i>" (<i>Le basi patologiche delle malattie</i>), Kumar, Abbas, Fausto editors, 8th Edition, Elsevier, Philadelphia, 2010.
5	Assessment methods and criteria	Oral exam

Programme of "FARMACOLOGIA GENERALE E SPECIALE" "BASIC AND CLINICAL PHARMACOLOGY AND TOXICOLOGY"		
D1646, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 4th year, 1st and 2nd semester		
Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)		
Teacher: Roberto MAGGIO		
1	Course objectives	<p>During the course the student must learn the mechanism of action, metabolism and effects of drugs. The student must be able to justify the choices of the main drugs available for the treatment of the most frequent pathologies based on knowledge of the pharmacodynamics and pharmacokinetics of the drugs, and the relationship between therapeutic effects and side effects.</p> <p>They must acquire the principle that pharmacological intervention should be constantly subjected to critical review in relation to the occurrence of side effects or toxic effects and the availability of new active ingredients that represent a real therapeutic advantage.</p> <p>The student should learn the principles of toxicology, the major causes of acute and chronic poisoning, the effect of drugs of abuse, and the pathology induced by them and possible detoxification treatments.</p> <p>Finally they will learn the principles and importance of pharmacovigilance, pharmacoepidemiology and pharmacoconomics.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of this Module include: <u>Basic pharmacology</u> - targets for drug action: receptors, ion channels, enzymes, carriers molecules, pumps and</p>

signal transducers;

- principles of pharmacological intervention on excitability and synaptic transmission;
- the passage of the drug across the cell membrane : diffusion, active transport , facilitated transport , pinocytosis;
- routes of drug administration, absorption, distribution, biotransformation, bioavailability and excretion of drugs;
- individual variations in the response to the drug: effects of age, genetic factors, idiosyncratic reactions, drug interactions;
- pharmacological intervention on cholinergic transmission;
- pharmacological intervention on transmission mediated by catecholamines;
- pharmacological intervention on serotonergic transmission;
- pharmacological intervention on transmission mediated by amino acids;
- pharmacological intervention on transmission mediated by opioid peptides;
- drugs acting on the purinergic system.

Neuropharmacology

- drugs for the treatment of epilepsy;
- drugs for the treatment of neurodegenerative diseases;
- drugs for the treatment of anxiety and insomnia;
- drugs for the treatment of depression;
- drugs for the treatment of psychoses;
- drugs for the treatment of migraine.

Cardiovascular and renal pharmacology

- drugs stimulating myocardial contractility (positive inotropic): digitalis and other inotropic agents;
- diuretics, drugs inhibiting the renin -angiotensin -aldosterone system;
- drugs acting on adrenergic receptors: β -blockers , α 1 and α 2 -adrenergic agonists and blockers;
- calcium channel blockers, nitro compounds;
- drugs for the treatment of heart failure;
- drugs for the prevention and treatment of myocardial infarction and drugs for the treatment of angina pectoris;
- medication for the treatment of cardiac arrhythmias.

Pharmacology of the respiratory system

- asthma medications, antitussive and muco-regulator.

Pharmacology of the gastrointestinal tract

- histamine H2 receptor antagonists;
- proton pump inhibitors;
- prostaglandins agonists;
- drugs for the eradication of H. pylori;
- antiemetics.

Pharmacology of sexual function

- selective phosphodiesterase V inhibitors and other drugs for erectile function;
- sex steroids and oral contraceptives.

Pharmacology of inflammatory and immune response

- non-steroidal anti-inflammatory drugs and corticosteroids;
- cytokines, immunosuppressive drugs, immune-boosting drugs;
- drugs that affect the disease process : gold salts, chloroquine , penicillamine, azathioprine, sulfasalazine, anti histaminergic H1, cromoglycates.

Pharmacology of the glucose and calcium homeostasis

- drugs to control blood glucose;
- medications for calcium homeostasis and bone tissue.

Toxicology

- general principles of toxicology and mechanisms of toxicity;
- drugs of abuse and addiction.

Chemotherapy

- major antimicrobial chemotherapy : β -lactams , macrolides, glucoside , quinolones , aminoglycosides , glycopeptides;
- antimicrobial chemotherapy limited to: chloramphenicol, tetracyclines, sulfonamides and/or associated with diaminopyrimidine;
- anti-tuberculosis drugs;
- antifungal drugs;

		<ul style="list-style-type: none"> - antiviral drugs; - principle of antimalarial drugs and anti-cancer drugs. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Acquiring knowledge of the pharmacokinetic processes which drugs undergo in the body and understanding of drugs produce therapeutic, side and toxic effects. o Applying knowledge to justify the choices of the main drugs available for the treatment of the most frequent pathologies and understanding of the signs of drug side effects in clinical practice. o Making informed judgements on the basis of the principle that pharmacological intervention should be constantly subjected to critical review in relation to the occurrence of side or toxic effects and choice of the availability of new active ingredients that represent a real therapeutic advantage. o Communicating knowledge to deliver safe and evidence-based care, critical and analytical reasoning, to perform medical skills and to promote the highest level of wellness and understanding of how drugs can be used to treat human pathologies. o Demonstrate capacities to continue learning by understanding other texts on related topics.
3	Prerequisites and learning activities	The student must have previous knowledge on Biochemistry, Human Anatomy, Physiology and Pathology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: <ul style="list-style-type: none"> - Goodman & Gilman: <i>Le basi farmacologiche della terapia</i>, Ed. Zanichelli, 2012 - Kazung B.G.: <i>Farmacologia generale e clinica</i>, Ed. Piccin, 2012
5	Assessment methods and criteria	Oral exam

<p>Programme of “PATOLOGIA SISTEMATICA (SANGUE, APPARATI CARDIOVASCOLARE, GASTROENTERICO E RESPIRATORIO)” “SYSTEMATIC PATHOLOGY (BLOOD, CARDIOVASCULAR, RESPIRATORY, AND GASTROENTERIC SYSTEMS)”</p>		
<p>This course is composed of seven Modules: 1) Cardiology, 2) Hematology, 3) Hematology Traineeship, 4) Pneumology, 5) Pneumology Traineeship, 6) Gastroenterology: gastroenteric system; 7) Gastroenterology: hepatology</p>		
<p>D4068, Compulsory Single Second Cycle Degree in in MEDICINE & SURGERY, 4th year, 1st semester</p>		
<p>Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)</p>		
<p>1) CARDIOLOGY (2 ECTS)</p>		
<p>Teacher: Maria PENCO (coordinator)</p>		
1	Course objectives	<p>The goal of this course is to provide the knowledge of pathophysiology, symptoms and clinical presentation of the cardiovascular diseases, and the relative diagnostic procedures. On successful completion of this module, the student should understand the clinical findings and diagnostic procedures in the cardiac patient.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Symptoms in cardiac patients, cardiovascular semeiotics, risk factors for cardiovascular disease, diagnostic examination in cardiac patients, coronary artery disease, hypertension, ECG, arrhythmias, syncope, shock, valvular heart diseases, cardiomyopathies, heart failure, endocarditis, pericarditis, acute and chronic pulmonary heart, cardiac arrest and cardiorespiratory resuscitation.</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of symptoms in cardiac patients, o have knowledge and understanding of pathophysiology of the main cardiovascular diseases, o understand and explain the diagnostic procedures in patients with cardiac diseases,

		<ul style="list-style-type: none"> ○ -understand hazards and contraindications of diagnostic procedures in cardiac patients ○ demonstrate skill in the evaluation of cardiac risk profile and ability to early recognize potentially life threatening clinical manifestations, ○ demonstrate capacity to plan an adequate diagnostic route in the different cardiac diseases.
3	Prerequisites and learning activities	The student must know the basic notions of cardiac anatomy and physiology, contained in the exams anatomy and physiology
4	Teaching methods and language	Lectures, home work. Language: Italian Ref. Text books: <ul style="list-style-type: none"> - Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012. - Hurst W.J., <i>Il cuore</i>, McGraw Hill Libri Italia, 1986. - AA.VV. <i>Malattie dell'apparato Cardiovascolare</i> In Teodori U: Trattato di Medicina Interna, Roma Seu
5	Assessment methods and criteria	Oral Exam

2) HEMATOLOGY (2 ECTS)

Teacher: Mauro DI IANNI		
1	Course objectives	The goal of this course is to provide the knowledge of pathophysiology, symptoms and clinical presentation of the hematological diseases, and the relative diagnostic procedures. On successful completion of this module, the student should understand the clinical findings and diagnostic procedures in the hematological patient.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - The hematopoietic stem cells: methods of identification, and functional and molecular characterization - The hematopoiesis: erythropoiesis, myelopoiesis, megakaryopoiesis, lymphopoiesis; - Classification of Anemia: Sideropenic anemia, megaloblastic anemias; G-6-PD and PK deficiencies; Thalassemia, Sickle cell Disease, anemia from Unstable hemoglobins; hemolytic anemias - Chronic Myeloproliferative syndromes: chronic myeloid leukemia, polycythemia rubra vera, Essential thrombocythemia; Idiopathic myelofibrosis, chronic myelomonocytic leukemia, - Ipereosinophilic syndromes. - Myelodysplastic Syndromes; - Acute Myeloid leukemia; - Acute Lymphoid Leukemia; - Chronic Lymphatic Leukemia, Hairy Cell Leukaemia, - Hodgkin's lymphoma; - Non-Hodgkin's lymphoma; - Plasma cell disorders: multiple myeloma, Waldenstrom's disease, amyloidosis; - Hemophilia; Thrombocytopenia and Platelet; disseminated intravascular coagulation; - Transplantation of Autologous and Allogeneic Bone Marrow. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have profound knowledge of normal hematopoiesis. ○ have knowledge and understanding pathophysiology of hematological diseases ○ understand and explain symptoms of the hematological diseases ○ demonstrate skill and ability in diagnosis of the haematological diseases
3	Prerequisites and learning activities	The student must know the basic notions of morphology and physiology of the blood cells, contained in the exams histology, physiology and immunology
4	Teaching methods and language	Lectures, home work. Language: Italian Ref. Text books: <ul style="list-style-type: none"> - Tura S, Baccarani M.: <i>Lezioni di Ematologia</i>. Società Editrice Esculapio, Bologna, 2011
5	Assessment methods and criteria	Oral exam

3) HEMATOLOGY TRAINEESHIP (1 ECTS)

Teacher: Mauro DI IANNI

1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Hematology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Diagnostic tools in hematology: morphology, flow-cytometry; citogenetics and molecular biology.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of execution of bone marrow biopsy; ○ Acquire basic knowledge on morphology of peripheral blood and bone marrow aspirate.
3	Prerequisites and learning activities	The student must know the basic notions of morphology and physiology of the blood cells, contained in the exams histology, physiology and immunology
4	Teaching methods and language	Team work and clinical practice Language: Italian Ref. Text Books: - Tura S, Baccarani M.: <i>Lezioni di Ematologia</i> . Società Editrice Esculapio, Bologna, 2011
5	Assessment methods and criteria	Oral exam
4) PNEUMOLOGY (1 ECTS)		
Teacher: Silvio ROMANO		
1	Course objectives	The goal of this course is to provide the knowledge of pathophysiology, symptoms and clinical presentation of the pulmonary diseases, and the relative diagnostic procedures. On successful completion of this module, the student should understand the clinical findings and diagnostic procedures in the respiratory patient.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the course include: Symptoms in respiratory patients, pulmonary semeiotics, diagnostic examination in respiratory patients, chronic bronchitis and pulmonary emphysema, bronchial asthma and occupational asthma, interstitial lung disorders, occupational diseases of the respiratory system, pulmonary tuberculosis, cancer of the lung. Pulmonary involvement in the course of systemic diseases. Lung infections, pleural effusions. Pulmonary embolism. The respiratory failure.</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> ○ have profound knowledge of symptoms in respiratory patients, ○ have knowledge and understanding of pathophysiology of the pulmonary diseases ○ understand and explain the diagnostic procedures in patients with pulmonary diseases ○ understand hazards and contraindications of diagnostic procedures in respiratory patients ○ demonstrate skill in the evaluation of the results of pulmonary diagnostic tests and ability to recognize potentially life threatening clinical manifestations, ○ demonstrate capacity to plan an adequate diagnostic route in the different pulmonary diseases.
3	Prerequisites and learning activities	The student must know the basic notions of respiratory system anatomy and physiology, contained in the exams anatomy and physiology.
4	Teaching methods and language	Lectures; seminars; team work; exercises, tutorials; home work Language: Italian Ref. Text books: - Bonsignore G., Bellia V., <i>Malattie dell'apparato Respiratorio</i> . McGraw-Hill, 2006 - Harrison, <i>Principi di medicina Interna</i> , McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam.
5) PNEUMOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Silvio ROMANO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Pneumology.

2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - pulmonary semeiotics - diagnostic examination in respiratory patient (Spirometry. Blood gas-analysis) <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Learn the techniques of physical and diagnostic examination in respiratory patient o Demonstrate ability to recognize the clinical findings of respiratory diseases and skill in the evaluation of the results of diagnostic tests
3	Prerequisites and learning activities	The student must know the basic notions of respiratory system anatomy and physiology, contained in the exams anatomy and physiology.
4	Teaching methods and language	<p>Team work and clinical practice</p> <p>Language: Italian and English</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Bonsignore G., Bellia V., <i>Malattie dell'apparato Respiratorio</i>. McGraw-Hill, 2006 - Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam

6) GASTROENTEROLOGY: GASTROENTERIC SYSTEM (1 ECTS)

Teacher: Giuseppe FRIERI		
1	Course objectives	The goal of this module is to provide the students with knowledge of diagnosis and treatment of disorders of the digestive system.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Diagnostic and therapeutic procedures in gastroenterology - Diseases of the oesophagus - Peptic ulcer disease - Diseases of the pancreas - Inflammatory bowel disease - Coeliac disease - Neoplasms of the gastrointestinal tract <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of etiology and pathogenesis of gastroenterological disorders o have knowledge and understanding of gastroenterological disorders principles o understand and explain gastroenterological pathology observed in practical activities o demonstrate skill in diagnosis of gastroenterological diseases and ability to address the treatments of main gastroenterological diseases o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy, physiology and pharmacology.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> - UNIGASTRO, <i>Manuale di Gastroenterologia</i>, Editrice Gastroenterologica Italiana, Edizione 2013-2015 - Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012. - Sleisenger & Fordtran's, <i>Gastrointestinal and Liver Disease - Pathophysiology, Diagnosis, Management</i> (9e) Saunders Editor.
5	Assessment methods and criteria	Written and oral exam

7) GASTROENTEROLOGY: EPATOLOGY (1 ECTS)

Teacher: Giovanni LATELLA		
1	Course objectives	<p>The goal of this course is to provide the knowledge of symptoms, signs and pathophysiology, of the liver and biliary tract diseases.</p> <p>On successful completion of this module, the student should understand the clinical findings and diagnostic procedures in the patient with liver and biliary tract disease.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Approach to the patient with liver and biliary tract diseases - Risk factors for liver and biliary tract diseases

		<ul style="list-style-type: none"> - Assessment of liver function - Acute hepatitis - Chronic Hepatitis - Alcoholic liver disease - Non-alcoholic steatosis and steatohepatitis - Toxic and drug hepatitis - Liver cirrhosis and its complications - Genetic and metabolic diseases involving the liver - Jaundice and cholestasis - Diseases of the biliary tract - Hepatocellular Carcinoma and Cholangiocarcinoma - Liver Transplantation <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have acquired essential skills and competences: <ul style="list-style-type: none"> ✓ To collect correct medical history relating to liver and biliary tract diseases, ✓ To perform a complete physical examination of patients with liver and biliary tract diseases, ✓ To make reasonable and consequential diagnostic hypotheses, ✓ To assess with accuracy the results of specific diagnostic procedures for the liver and biliary tract diseases, ✓ To see at least once specific diagnostic procedures like ultrasound of the liver and biliary tract, liver biopsy, abdominal paracentesis, gastroscopy, ERCP, etc. o have profound knowledge of symptoms and signs of the liver and biliary tract diseases, o have knowledge and understanding of pathophysiology of the liver and biliary tract diseases o understand and explain the diagnostic procedures in patients with liver and biliary tract diseases o understand hazards and contraindications of diagnostic procedures in patients with liver and biliary tract diseases o demonstrate skill in the evaluation of the results of the liver and biliary tract diagnostic tests and ability to recognize potentially life threatening clinical manifestations, o demonstrate capacity to plan an adequate diagnostic route in the different liver and biliary tract diseases.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy and physiology of the liver and biliary tract, contained in the exams anatomy and physiology.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> - UNIGASTRO, <i>Manuale di Gastroenterologia</i>, Editrice Gastroenterologica Italiana, Edizione 2013-2015 - Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012. - Sleisenger & Fordtran's, <i>Gastrointestinal and Liver Disease - Pathophysiology, Diagnosis, Management</i> (9e) Saunders Editor.
5	Assessment methods and criteria	Written and oral exam

Programme of "ONCOLOGIA MEDICA E CHIRURGICA"
"MEDICAL AND SURGICAL ONCOLOGY"

This course is composed of eleven Modules: 1) Surgical Oncology, 2) Surgical Oncology Traineeship, 3) Plastic Surgery, 4) Plastic Surgery Traineeship, 5) Pain Therapy, 6) Pain Therapy Traineeship, 7) General Surgery, 8) General Surgery Traineeship, 9) Medical Oncology: Sporadic Neoplasms, 10) Medical Oncology: Sporadic Neoplasms, Traineeship, 11) Medical Oncology: Hereditary Neoplasms

D1650, Compulsory

Single Second Cycle Degree in MEDICINE & SURGERY, 4th year, 2nd semester

Number of ECTS credits: 16 (total workload is 400 hours; 1 credit = 25 hours)

1) SURGICAL ONCOLOGY (2 ECTS)		
Teacher: Silvio REA		
1	Course objectives	Aims of the course is to provide integrated knowledge about solid tumours: epidemiology, pathogenesis, classification and evolution, metastasis, prognostic factors, primary and secondary prevention, medical and surgical treatment, tissue reconstruction after tumour surgery, radiotherapy, palliative treatments including management of pain in cancer patients.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Cancer prevention, screening and early detection - Clinical research in early cancer detection - Surgical staging - Principles of oncologic surgical pathology - Surgical treatment of metastases - Lymph nodes dissection - Paraneoplastic syndromes - Surgery for vascular access - Breast cancer - Thyroid cancer <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have extensive and updated knowledge about cancer prevention and principles of oncological surgery, with special attention to breast and thyroid cancer, and explain the relative concepts using an appropriate scientific language o demonstrate capacity for reading and understand texts and scientific publications on related topics o demonstrate ability to communicate key information about surgical oncology to non-experts o demonstrate interest to health, well-being and safety with special attention to cancer prevention o be able to apply and transmit the fundamentals of early cancer detection, with particular attention to breast cancer.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy, physiology, immunology, epidemiology, and biology of cancer
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian. Some themes are illustrated in English with translation and comment of selected synopses of disease descriptions on appropriate publications (provided to all students by the teachers).</p> <p>Ref. Text books:</p> <p>De Vita V et al.: <i>Cancer</i>, Lippincott Williams & Wilkins; 9 th eEdition (March 8, 2012)</p> <p>Veronesi U. <i>Manuale di chirurgia oncologica</i>. Masson Ed., 1998</p> <p>Veronesi U., <i>Senologia oncologica</i>, Masson Ed., 1995</p>
5	Assessment methods and criteria	<p>Written/oral, including computer test with randomly chosen multiple response questions before the final oral exam, composed of four partial tests</p> <p>Scores are expressed in numbers, from "sufficient" (18/30) up to "outstanding" (30/30 cum laude), taking into account all the partial and final tests.</p>
2) SURGICAL ONCOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Silvio REA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Surgical Oncology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - practical guidelines for early cancer detection according to age, gender and risk factors (familiarity, lifestyle..) - diagnosis and surgical treatment of pre-cancerous lesions - clinical examination in cancer patients and its role in tumour diagnosis and staging <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of breast, thyroid, abdominal and lymphnodes examination o Learn the indications and techniques of fine-needle biopsy

		<ul style="list-style-type: none"> ○ Acquire basic knowledge on surgical breast diseases, their diagnosis and treatment ○ Acquire basic knowledge on surgical thyroid diseases, their diagnosis and treatment ○ Acquire basic knowledge on colon cancer and pre-cancerous lesions, their diagnosis and treatment ○ Acquire basic knowledge on the surgical treatment of cancer and pre-cancerous lesions ○ Acquire basic knowledge on combined surgical and radiotherapeutic treatment of cancer.
3	Prerequisites and learning activities	The student must know the basis of tumour biology, with special reference to epidemiology, risk factors related to lifestyle and occupational activities, genetic predisposition, pre-cancerous lesions, and tumour classification (TNM).
4	Teaching methods and language	Team work and clinical practice Language: Italian and English Ref. Text Books: De Vita V et al.: <i>Cancer</i> , Lippincott Williams & Wilkins; 9 th eEdition (March 8, 2012) Veronesi U. <i>Manuale di chirurgia oncologica</i> . Masson Ed., 1998 Veronesi U., <i>Senologia oncologica</i> , Masson Ed., 1995
5	Assessment methods and criteria	Oral exam

3) PLASTIC SURGERY (2 ECTS)

Teacher: Maurizio GIULIANI		
1	Course objectives	The course aim to provide the students with theoretical and practical knowledge sufficient to understand elements of of plastic surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Biology of wound healing - Wounds and tissue repair mechanisms - Sutures and dressings - Chronic wounds - Atrophic scar, hypertrophic scar and keloid - Grafts and flaps - Burns and cold injuries - Malignant neoplasms of the skin - Diseases of the vessels - Congenital Malformations of the head and neck, trunk, external genitalia and arts - Radiodermatitis and radionecrosis - Dupuytren's disease - Pathologies of the male and female breast - Cutaneous lasersurgery - Cosmetic surgery - Anesthesia, analgesia and sedation - Antibiotic prophylaxis <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of diagnosis and clinical practice ○ have knowledge and understanding of pathological elements ○ demonstrate skill in Plastic, Reconstructive and Aesthetic Surgery and ability to recognize different diseases, making diagnosis and to propose an appropriate treatment ○ demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know pathology and physiology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and English Ref. Text Books: - Giuliani M., <i>Lezioni di Chirurgia Plastica</i> , Gran Sasso, 2006. - Thorne C.; Chung KC; Gosain A.; Guntner GC; Mehrara BJ: <i>Grabb and Smith's plastic surgery</i> , Ed: Philadelphia : Wolters Kluwer/Lippincott Williams & Wilkins Health, 2014.
5	Assessment methods and criteria	Written exam

4) PLASTIC SURGERY TRAINEESHIP (1 ECTS)

Teacher: Maurizio GIULIANI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 3) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Plastic Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Treatment of scars, - Wound healing, - Basic suturing, - Plastic and Reconstructive Surgery techniques <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire basic knowledge of wound healing, scar revision, and the surgical correction of post-traumatic or post-surgical deformities appearing anywhere on the body o Acquire basic knowledge of surgical treatment of nonmelanoma skin cancer o Learn the techniques of post-mastectomy breast reconstruction, surgical correction of severe facial deformities
3	Prerequisites and learning activities	The student must know surgical anatomy, pathology.
4	Teaching methods and language	Team work and clinical practice Ref. Text Books: - Giuliani M., <i>Lezioni di Chirurgia Plastica</i> , Gran Sasso, 2006. - Thorne C.; Chung KC; Gosain A.; Guntner GC; Mehrara BJ: <i>Grabb and Smith's plastic surgery</i> , Ed: Philadelphia : Wolters Kluwer/Lippincott Williams & Wilkins Health, 2014.
5	Assessment methods and criteria	Written exam

5) PAIN THERAPY (1 ECTS)

Teacher: Franco MARINANGELI		
1	Course objectives	Objective of the course is to provide students with knowledge of physiopathology and evaluation of pain, principal drugs used in pain therapy and the differences between acute and chronic pain.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Pathophysiology of pain, Pain Assessment Scale, NSAIDs and Drugs Adjuvants, Weak and Strong opioids, Cancer pain, Acute Pain and Chronic Pain, Procedural Pain, Episodic serious pain</p> <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of physiopathology and evaluation of pain o have knowledge and understanding about drugs used in pain therapy o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must have previous knowledge in physiology and pharmacology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: Panerai A., Varrassi G. <i>Terapia del dolore</i> , Selecta Medica, 2004
5	Assessment methods and criteria	Oral exam

6) PAIN THERAPY TRAINEESHIP (2 ECTS)

Teacher: Franco MARINANGELI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 5) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Pain Assessment Scale - Medical record and clinical examination <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of clinical examination and evaluation of pain

		<ul style="list-style-type: none"> ○ Acquire knowledge about the use of pain medications and their routes of administration
3	Prerequisites and learning activities	The student must have previous knowledge in physiology and pharmacology.
4	Teaching methods and language	<p>Team work and clinical practice</p> <p>Language: Italian and English</p> <p>Ref. Text Books: Panerai A., Varrassi G. <i>Terapia del dolore</i>, Selecta Medica, 2004</p>
5	Assessment methods and criteria	Oral exam
7) GENERAL SURGERY (1 ECTS)		
Teacher: Francesco CARLEI		
1	Course objectives	The General Surgery course provides an overview of the principles of surgical pathology commonly observed during practical activities. The goal of this course is to provide the student with knowledge adequate to identify the most common pathology of surgical interest and apply the principles for a correct diagnosis and therapy.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> -The breast <ul style="list-style-type: none"> ✓ Anatomy ✓ Breast development and physiology ✓ Diagnosis of the breast disease ✓ Benign breast tumors and related diseases ✓ Malignant tumor of the breast -The thyroid gland <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the thyroid diseases ✓ Thyroiditis ✓ Nodular goiter, benign and malignant neoplasms -The esophagus <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the esophagus diseases ✓ Diverticula of the esophagus ✓ Disorders of the esophageal motility ✓ Hiatal hernia and gastroesophageal reflux disease ✓ Tumors of the esophagus -The stomach <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the stomach diseases ✓ Acute and chronic gastritis ✓ Peptic ulcer disease ✓ Adenocarcinoma of the stomach -The Colon and rectum <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the colon and rectum diseases ✓ Benign neoplasm of the colon end rectum ✓ Carcinoma of the colon and rectum -The acute abdomen <ul style="list-style-type: none"> ✓ Clinical consideration and diagnosis of the acute abdomen ✓ Peritonitis ✓ Acute obstruction of the GI tract. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Acquire knowledge and understanding of general surgery principles, ○ Be able to apply knowledge and understanding of general surgery principles, ○ Be able to make informed judgments and choices on surgical pathology observed in practical activities, ○ Be able to detect and evaluate diseases of surgical interest and apply principles of surgical therapy, ○ Be able to continue learning and integrate information from lectures and practical activities on general surgery topics.

3	Prerequisites and learning activities	The student must know the basic notion of human anatomy, physiology and pharmacology..
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: - <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012.
5	Assessment methods and criteria	Oral exam
8) GENERAL SURGERY TRAINEESHIP (2 ECTS)		
Teacher: Francesco CARLEI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 7) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of General Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Main topics of the course were 1) thyroid medullary carcinoma, 2) hiatal hernia of the esophagus and gastroesophageal reflux, 3) acute and chronic gastritis, peptic ulcer disease, 4) clinical consideration and diagnosis of the acute abdomen, peritonitis and acute obstruction of the GI tract, 5) neuroendocrine neoplasms of the GI tract and pancreas, 6) Acute and chronic pancreatitis, 7) gallbladder and biliary tree. On successful completion of this module, the student should <ul style="list-style-type: none"> ○ Learn the techniques of clinical examination of the patient: explore and assess clinical signs of diseases of thyroid gland, esophagus, stomach and biliary system, pancreas and intestine ○ Acquire basic knowledge of inserting nasogastric tube, managing biliary and peritoneal drainage, performing rectal exploration, appropriate disinfection and medication of surgical wounds, insert i.v. catheter, acquiring basic techniques of suturing wounds
3	Prerequisites and learning activities	The student must he should already have good knowledge of GI tract and pancreas anatomy physiology, be familiar with biochemistry, endocrinology and histology. Good knowledge of English is essential
4	Teaching methods and language	Team work and clinical practice Language: Italian and English Ref. Text Books: - <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012.
5	Assessment methods and criteria	Oral exam
9) MEDICAL ONCOLOGY: SPORADIC NEOPLASMS (2 ECTS)		
Teacher: Corrado FICORELLA (Coordinator)		
1	Course objectives	The course aim to provide the students integrated knowledge of solid tumours.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Epidemiology and prevention of cancer, tumor biology, clinical methodology in oncology, diagnosis and principles of treatment of solid tumors. On successful completion of this module, the student should <ul style="list-style-type: none"> ○ have profound knowledge of prevention, diagnosis and biology of solid tumours ○ have knowledge and understanding of principles of medical therapy ○ explain relative oncologic knowledge using an appropriate scientific language ○ demonstrate capacity for reading and understanding scientific publications
3	Prerequisites and learning activities	The student must know the basic notions of anatomy, pathology, surgery, immunology, molecular biology of tumours
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: Bianco A.R., De Placido S., Tortora G.: <i>Manuale di Oncologia Clinica</i> , McGraw-Hill, 2007

5	Assessment methods and criteria	Oral exam
10) MEDICAL ONCOLOGY: SPORADIC NEOPLASMS, TRAINEESHIP (1 ECTS)		
Teacher: Corrado FICORELLA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 9) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Medical Oncology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - screening and early detection of solid tumours - diagnosis and staging of solid tumours - biology, natural history and general principles of medical therapy of solid tumours <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the clinical and diagnostic methodology in medical oncology o Acquire basic knowledge of biology and natural history of solid tumours o Acquire basic knowledge of medical therapy of solid tumours
3	Prerequisites and learning activities	The student must know basic notions of anatomy, pathology, surgery, immunology, molecular biology of tumours.
4	Teaching methods and language	Team work and clinical practice Language: Italian Ref. Text Books: Bianco A.R.: <i>Manuale di Oncologia Clinica</i> , McGraw-Hill, 2007
5	Assessment methods and criteria	Oral exam
11) MEDICAL ONCOLOGY: HEREDITARY NEOPLASMS (1 ECTS)		
Teacher: Enrico RICEVUTO		
1	Course objectives	The course aim to provide the students integrated knowledge of hereditary tumours.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Family history and genetic predisposition to cancer; - Genes and functional mechanisms of genetic predisposition; - Clinical pattern of care for the management of familiarity and patients / subjects not affected by genetic predisposition; - Specific approaches to prevention and treatment of genetic predisposition cancer <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of prevention, diagnosis and biology of hereditary tumours o have knowledge and understanding of principles of medical therapy o explain relative oncologic knowledge using an appropriate scientific language o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know basic notions of anatomy, pathology, surgery, immunology, molecular biology of hereditary tumours.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: De Vita V et al.: <i>Cancer</i> , Lippincott Williams & Wilkins; 9 th eEdition (March 8, 2012) Veronesi U. <i>Manuale di chirurgia oncologica</i> . Masson Ed., 1998
5	Assessment methods and criteria	Oral exam

**Programme of "DIAGNOSTICA PER IMMAGINI E RADIOTERAPIA"
"DIAGNOSTIC IMAGING AND RADIOTHERAPY"**

This course is composed of five Modules: 1) Radiology, 2) Radiotherapy, 3) Radiotherapy Traineeship, 4) Nuclear Medicine, 5) Nuclear Medicine Traineeship.

D2086, Compulsory

Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 1st semester

Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)

1) RADIOLOGY(3 ECTS)

Teacher: Carlo MASCIOCCHI (Coordinator)

1	Course objectives	The goal of this course is to give the students the basics to be able to interpret radiological examinations at basilar level
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Basic definition of matter. Matter structure. Magnetic properties of matter - Ondulatory theory. Hydrogen spectra. Definition of the phenomenon of resonance - Ionizing and excitation processes. X rays generation - Nature and properties of X rays. Emission and absorption - Natural contrast. Artificial contrast media - Indications, risks and contraindications in the employment of iodate contrast media - New methods of producing images from the human body - Methods to produce images without employment of ionizing radiation - Radiography and fluoroscopy - Computed Tomography (CT). Principles and clinical applications - Ultrasounds (US). Principles and clinical applications - Magnetic Resonance Imaging (MRI). General principles. Clinical applications - Methods of choice of the radiological procedures. Role and position of Ultrasounds in the scale of diagnostic techniques - X ray shielding devices for patients and operators - Radiation-induced professional lesions <p>RESPIRATORY SYSTEM</p> <ul style="list-style-type: none"> - Methods of study, anatomy and radiological semeiotics - Anomalies of the respiratory spaces - Non tubercular inflammatory diseases of the respiratory system - Pulmonary tuberculosis - Lung cancer and radiological staging - Pleuritis <p>BREAST</p> <ul style="list-style-type: none"> - Methods of study of breast diseases <p>CARDIOVASCULAR SYSTEM</p> <ul style="list-style-type: none"> - Heart and great vessels. Methods of study, anatomy and radiological semeiotics - Imaging of congenital and acquired heart diseases - Coronarography, MRI, CT - Peripheral vessels. Angiography, MRI, CT of various diseases - Diagnostic and therapeutical employment of the radiological techniques <p>ABDOMEN</p> <ul style="list-style-type: none"> - X rays of abdomen. X rays of acute abdomen <p>DIGESTIVE SYSTEM</p> <ul style="list-style-type: none"> - Methods of study, anatomy and radiological semeiotics - Esophageal diseases - Gastric ulcers - Stomach cancer - Duodenal ulcer - Congenital malformations of small intestine - Malabsorption - Small intestine tumours - Common diseases of colon and small intestine - Congenital malformations of large intestine - Colon diverticula - Colitis - Large intestine tumours

		<ul style="list-style-type: none"> - Radiological staging of malignant tumours of the digestive system - Digestive haemorrhage - Post-surgical follow-up <p>LIVER AND BILIARY DUCT</p> <ul style="list-style-type: none"> - Methods of study, anatomy and physiology, radiological semeiotics - Bile duct calculi, inflammation of the gall bladder - Methods of study of jaundice - Staging of liver tumour. Liver metastases: Diagnostic problems - Interventional radiology of the liver. Bile and abscess drainage, tumour embolization and perfusional chemotherapy <p>URINARY SYSTEM</p> <ul style="list-style-type: none"> - Methods of study, anatomy and radiological semeiotics - Congenital malformations of kidneys and urinary duct - Kidney calculi - Non tubercular inflammation of the kidneys - Tuberculosis of the kidneys - Urinary duct tumours. Radiological staging <p>RETROPERITONEUM</p> <ul style="list-style-type: none"> - Pancreatic, adrenal and retroperitoneal diseases <p>SKELETAL SYSTEM</p> <ul style="list-style-type: none"> - Structure and physiology. Methods of study. Radiological anatomy - Bone alterations and their meaning (osteoporosis, osteopenia, osteosclerosis, osteonecrosis, osteolysis, periostosis , osteodystrophy) - Inflammation of the bone with particular focus on tuberculosis - Fractures - Benign and malignant tumours. Radiological staging of malignant tumours - Bone metastases: Diagnostic problems - Joint diseases <p>PELVIS</p> <ul style="list-style-type: none"> - Methods of study and radiological anatomy - US, CT and MRI in the study of male pelvis - US, CT and MRI in the study of female pelvis <p>CENTRAL NERVOUS SYSTEM (CNS)</p> <ul style="list-style-type: none"> - Techniques and methods of study of the CNS - Radiological anatomy - CT and MRI semeiotics - Cerebrovascular diseases - Skull and vertebral trauma - Tumours - Inflammatory, demyelinating and degenerative diseases - Rachis and marrow <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of human radiological anatomy o have knowledge and understanding of human radiological anatomy o understand and explain human radiological anatomy o understand application of different imaging modalities o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the basic mathematical and physical notions.
4	Teaching methods and language	Lectures and exercises Language: Italian (and English) Ref. Text books: - Passariello R., Simonetti G. <i>Compendio di Radiologia</i> III Edition, Ed. Gnocchi, Napoli, 2010
5	Assessment methods and criteria	Oral exam
2) RADIOTHERAPY (2 ECTS)		
Teacher: Ernesto DI CESARE		

1	Course objectives	The goal of this course is to provide the motivations, definitions and techniques in support of the usefulness of Radiotherapy. This Module is an introduction to Radiotherapy . On successful completion of this module, the student should understand the fundamental concepts of Radiotherapy.
2	Course content and Learning outcomes (Dublin descriptors)	The course consists of: Topics of the module include: Radiation Physics: Atom, Radiation, Ionizing Radiation, the interaction of radiation with matter Radiobiology: Cell Biology and Carcinogenesis, Cell structure, Cellular effect of Radiation, Factor Modifying biological effects of ionizing radiation, Target tissue Characteristic, Target Theory, Surviving Fraction, Tissue And Organ Response to Radiation Radiation Oncology: Central Nervous System Tumors, Head and Neck Cancers, Gynecological Cancers, Soft Tissue Sarcoma, Skin Cancer, Lymphoma, prostate cancer, breast cancer On successful completion of this module, the student should <ul style="list-style-type: none"> o have profound knowledge of basic fundament of Radiotherapy o have knowledge and understanding of Radiation effects on cellular lines o understand the fundamental concepts of interaction of the radiation with the matter o have profound knowledge of basic techniques in Radiotherapy o have knowledge and understanding of Radiation Oncology o demonstrate skill in Radiotherapeutic procedures o - demonstrate capacity in Radiotherapy principles
3	Prerequisites and learning activities	The student must have the basic mathematical and physical notions.
4	Teaching methods and language	Lectures and exercises. Language: Italian and English Ref. Text books: - Beyzadeoglu Murat, <i>Basic Radiation Oncology, Springer, 2010.</i>
5	Assessment methods and criteria	Oral exam
3) RADIOTHERAPY TRAINEESHIP (1 ECTS)		
Teacher: Ernesto DI CESARE		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Radiotherapy.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: <ul style="list-style-type: none"> - Practical approach on Simulation Technique - Practical approach on Irradiation Technique - Practical approach on acceptance and follow-up of patients submitted to oncology radiation. On successful completion of this module, the student should <ul style="list-style-type: none"> o Learn the techniques of Oncology radiation o Acquire basic knowledge of indication to Oncology radiation. o Acquire basic knowledge of collateral effects of oncology radiation
3	Prerequisites and learning activities	The student must know concepts of clinical pathology
4	Teaching methods and language	Lectures and exercises. Language: Italian and English Ref. Text books: - Beyzadeoglu Murat, <i>Basic Radiation Oncology, Springer, 2010.</i>
5	Assessment methods and criteria	Written and oral exam
4) NUCLEAR MEDICINE (2 ECTS)		
Teacher: Antonio BARILE		
1	Course objectives	The goal of this course is to provide the motivations, definitions and techniques in support of the usefulness of Nucleare Medicine . This Module is an introduction to Nuclear Medicine .

		On successful completion of this module, the student should understand the fundamental concepts of Nuclear Medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Radiochemical and radiopharmaceutical principles - Nature and characteristics of radioisotopes - Scintigraphic image production - Nuclear medicine techniques - Study in endocrinology (thyroid, parathyroid, adrenal glands). Indications - Study of cardiovascular system. Indications - Study of skeletal system and lungs. Indications - Study of urinary system. Indications - Radiometabolic therapy. Indications <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of basic fundament of Nuclear Medicine o have knowledge and understanding of radionuclides effects on cellular lines o understand the fundamental concepts of interaction of the radionuclides with the matter o have profound knowledge of basic techniques in Nuclear Medicine o have knowledge and understanding of application of Nuclear Medicine in Oncology o demonstrate skill in Nuclear Medicine procedures o demonstrate capacity in Nuclear Medicine principles
3	Prerequisites and learning activities	The student must have the basic mathematical and physical notions.
4	Teaching methods and language	Lectures, exercises Language: Italian, English Ref. Text Books: Volterrani D, Erba PA, Mariani G, Donato L. <i>Fondamenti di medicina nucleare. Tecniche e applicazioni</i> . Springer Italia, 2010.
5	Assessment methods and criteria	Oral exam
5) NUCLEAR MEDICINE TRAINEESHIP (1 ECTS)		
Teacher: Antonio BARILE		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Nuclear Medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>The course consists of:</p> <ul style="list-style-type: none"> -Presentation and discussion of clinical cases through the interpretation of images, -Practical exercises on methodologies and techniques for imaging, -Correct use of equipment and principles of safety. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of Nuclear Medicine o Acquire basic knowledge of indication to Nuclear Medicine. o Acquire basic knowledge of collateral effects of Nuclear Medicine
3	Prerequisites and learning activities	The student must have the basic mathematical and physical notions.
4	Teaching methods and language	Lectures, exercises Language: Italian, English Ref. Text Books: Volterrani D, Erba PA, Mariani G, Donato L. <i>Fondamenti di medicina nucleare. Tecniche e applicazioni</i> . Springer Italia, 2010.

**Programme of “DISCIPLINE MEDICO-CHIRURGICHE SPECIALISTICHE”
“SPECIALIZED MEDICAL-AND SURGICAL DISCIPLINES”**

This course is composed of eleven modules: 1) Audiology, 2) Ophthalmology, 3) Ophthalmology Traineeship, 4) Odontostomatological Diseases, 5) Odontostomatological Diseases Traineeship, 6) Maxillo-Facial Surgery, 7) Maxillo-Facial Surgery Traineeship, 8) Thoracic Surgery, 9) Thoracic Surgery Traineeship 10) Otorhinolaringoiatry, 11) Otorhinolaringoiatry Traineeship.

D2180, Compulsory

Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 1st semester

Number of ECTS credits: 15 (total workload is 375 hours; 1 credit = 25 hours)

1) AUDIOLOGY (1 ECTS)

Teacher: Maria LAURIELLO

1	Course objectives	The course aim to provide the students with the study of hearing disorders and the rehabilitation of people with hearing impairments.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anatomy and physiology of the paranasal sinuses - Acute and chronic rhinitis - Epistaxis - Allergic rhinitis and nasal hypersensitivity nonspecific - The acute and chronic rhino-sinusitis - The nasal polyposis - The acute and chronic laryngitis - The dysphonia caused by nodules and polyps of the larynx - The precancerous and cancer of the larynx <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of clinical signs of acute rhino-sinusitis and laryngitis o have knowledge and understanding the precancerous and cancer of the larynx o understand and explain the nasal polyposis and the dysphonia caused by nodules and polyps of the larynx o demonstrate skill in clinical diagnosis and ability to perform current medical treatment for the above mentioned pathologies o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam

2) OPHTHALMOLOGY (2 ECTS)

Teacher: Marco CIANCAGLINI

1	Course objectives	The goal of this Course is to provide the students with scientific knowledge enabling them to understand the main ophtalmological diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Anatomy of the visual system, physiology of vision, refraction defects, cornea, lens, uvea, retina, optic nerve diseases, systemic diseases and eye</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of etiology and pathogenesis of ophthalmological diseases o have knowledge and understanding of ophthalmology principles o understand and explain pathology observed in practical activities o demonstrate skill in diagnosis of ophthalmological diseases and ability to address the tretaments of main ophthalmological diseases o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology and pharmacology.

4	Teaching methods and language	Lectures. Language: Italian Ref. Text books: - Bagolini et al. <i>Oftalmologia clinica</i> . Monduzzi, 2006 - Kanski J. <i>Oftalmologia Clinica</i> , Elsevier – Masson, 2008
5	Assessment methods and criteria	Oral exam
3) OPHTHALMOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Marco CIANCAGLINI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Eye Diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Eye examinations - Cranial nerve II examination - Use of the ophthalmoscope On successful completion of this module, the student should o Learn the techniques of the eye examinations o Acquire basic knowledge on medical treatments o Acquire basic knowledge on surgical treatments
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology and pharmacology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Bagolini et al. <i>Oftalmologia clinica</i> . Monduzzi, 2006 - Kanski J. <i>Oftalmologia Clinica</i> , Elsevier – Masson, 2008
5	Assessment methods and criteria	Oral exam
4) ODONTOSTOMATOLOGICAL DISEASES (2 ECTS)		
Teacher: Roberto GATTO		
1	Course objectives	The course of pediatric dentistry is designed to provide the student with the theoretical knowledge and practical examples needed to prevent, detect and treat abnormalities and oral diseases. As part of the course the student will gain knowledge of major diseases, congenital or acquired, acute or chronic, with particular regard to caries, dental traumatology and the malocclusions. It also will give special emphasis to the oral manifestations of systemic diseases and frameworks pertaining to oral surgery, odontogenic pathologies early onset.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Embryology and anatomy of the oral cavity - Developmental Abnormalities - Cysts of the jaws - Caries - The periodontitis - The malocclusion - The oral cancer - The salivary glands. On successful completion of this module, the student should: o have profound knowledge of diagnosis and clinical practice o have knowledge and understanding therapeutic elements, o understand and explain oral pathology and preventive dentistry in paediatric dentistry o demonstrate skill in paediatric dentistry and ability to professional care , o demonstrate capacity for reading and understand other texts on related topics
3	Prerequisites and learning activities	It is considered essential to study issues relating to the embryology, physiology, pathology, general dental and focusing on the growth and development of physiological and pathological aging of the entire stomatognathic system.

		In specific it is necessary a good knowledge and understanding dental embryology, morphology of the deciduous teeth, the processes of craniofacial development, and physiology of the stomatognathic system.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Valletta G., Bucci E., Matarasso S. <i>Odontostomatologia</i> . Piccin-Nuova Libreria, 1998
5	Assessment methods and criteria	Oral exam.
5) ODONTOSTOMATOLOGICAL DISEASES TRAINEESHIP (1 ECTS)		
Teacher: Roberto GATTO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Odontostomatological Diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Children's oral health and dental care. -Preventive dentistry and cranium-mandibular dysfunctions On successful completion of this module, the student should <ul style="list-style-type: none"> o Acquire basic knowledge of diagnosys and clinical practice o have knowledge and understanding of maxillofacial dysmorphism, o have profound knowledge of diagnosys and clinical practice
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	Tutorials Language: Italian Ref. Text Books: Valletta G., Bucci E., Matarasso S. <i>Odontostomatologia</i> . Piccin-Nuova Libreria, 1998
5	Assessment methods and criteria	Oral exam
6) MAXILLO-FACIAL SURGERY (2 ECTS)		
Teacher: Tommaso CUTILLI		
1	Course objectives	The goal of this Course is to provide the students with scientific knowledge enabling them to understand the main fields of oro-maxillofacial surgery. The Course supplies clinical elements for diagnosis and treatment of benign and malignant tumors, facial and cranio-facial trauma, facial dysmorphism and congenital deformities, the wide osseous pathology, temporomandibular joint disorders.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Surgical anatomy of maxillofacial region - Tumors of oral cavity, middle third, mandible, salivary glands, facial skin. - Cervical nodes and disease - Facial Trauma: fractures of mandible, maxillary, middle third, orbita, nasal-ethmoidal complex. Craniofacial fractures. - Facial dysmorphism: mandibular and/or maxillary defects and excesses, open bite, asymmetry. - Congenital deformities: cleft lip and palate, First arch Syndrome, Franceschetti Syndrome, facial cleft, hemyfacial microsomia. - Mandibular and Maxillary osteolytic lesions - Osteoradionecrosis and BRONJ - Temporomandibular disorders On successful completion of this module, the student should <ul style="list-style-type: none"> o have profound knowledge and understanding of early clinical signs of oral tumors o have knowledge and understanding of maxillofacial dysmorphism, o understand and explain the osteolytic maxillary lesions o understand treatment of Temporomandibular Joint Pathology o demonstrate skill in orthopedic techniques for treatment of dento-maxillary trauma

		<ul style="list-style-type: none"> o be able to understand the diagnostical imaging o be able to perform a biopsy o be able to apply dental arch o develop skills for the critical evaluation of scientific literature, research and new products for the continuous up-dating of their knowledge and competencies.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy and pathology of oral and maxillofacial region
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books: -Italian Society of Maxillofacial Surgery “ <i>Maxillofacial Surgical Pathology</i> “ 2007, Minerva Ed Turin - Italy -Brusati R, Sesenna E: <i>Chirurgia delle deformità mascellari</i> . 2008, Masson Ed, Milano
5	Assessment methods and criteria	Oral exam
7) MAXILLO-FACIAL SURGERY TRAINEESHIP (1 ECTS)		
Teacher: Tommaso CUTILLI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 6) of which constitutes an integral part. The goal of Traineeship is to provide the students the ability for the management of the main maxillofacial pathologies (traumatology, oncology, facial dysmorphism and deformities, TMJ disorders, osseous lesions). They will be able to apply the basic principles and methods of Maxillo-Facial Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Maxillofacial Traumatology - Maxillofacial Oncology - Maxillofacial Dysmorphism - Temporomandibular disorders <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn to perform the clinical examination of maxillofacial patient o Learn the techniques of biopsy o Acquire basic knowledge of the procedure of treatment of the mandibular luxation o Acquire basic knowledge of the procedure of application of dental arch bar for Inter-Maxillary Fixation (IMA) o Acquire basic knowledge of the diagnostic procedure of TMJ disorders.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy, pathology and clinic elements of oral and maxillofacial region.
4	Teaching methods and language	Examination, discussion and treatment of the clinical cases. Access to the surgical room. Language: Italian Ref. Text Books: -Italian Society of Maxillofacial Surgery “ <i>Maxillofacial Surgical Pathology</i> “ 2007, Minerva Ed Turin - Italy -Brusati R, Sesenna E: <i>Chirurgia delle deformità mascellari</i> . 2008, Masson Ed, Milano
5	Assessment methods and criteria	Oral exam
8) THORACIC SURGERY (2 ECTS)		
Teacher: Roberto CRISCI		
1	Course objectives	To train the student to acquire knowledge and skills about making the diagnostic and treatment of diseases of the chest of surgical interest.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Neoplasm of the lung and pleural tumors: etiology, physiopathology, diagnosis, staging and surgical treatment.</p> <p>Pleural effusions: pleural empyema, haemothorax, paraneoplastic effusions: diagnosis and surgical therapy.</p> <p>Chest trauma: blunt and open, trauma parietal and / or visceral Voucher chest, the fractures of the sternum, pneumothorax, post-traumatic, post-traumatic hemothorax, chylothorax, broken iris, the ruptures of the airways, the breaking of the large intrathoracic vessels.</p>

		<p>Thoracic Endoscopy: Bronchoscopy and bronchoscopy, videothoracoscopy diagnostic mediastinoscopy and mediastinotomy.</p> <p>The Videothoracoscopy Operations (VATS): indications, advantages, limitations, technique, results.</p> <p>Neoplasm and functional diseases of esophagus: physiopathology, diagnosis and therapy.</p> <p>The pulmonary ventilation, diffusion, perfusion, pulmonary, respiratory mechanics, control of breathing.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of chest surgical disease ○ have knowledge and understanding of signs and symptoms of chest diseases ○ understand and explain physiopathology of chest diseases ○ understand the laboratory and x-ray examinations about chest diseases ○ demonstrate skill in analyse of cases and ability to choose of treatment programs ○ demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology.
4	Teaching methods and language	<p>Lectures, team work, exercises, home work, report.</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <p>Gibbon JH et al.: <i>Surgery of the Chest</i>, Saunders Ed., 1990</p> <p>Venuta F., Coloni G.F.: <i>Malattie del Torace</i>, SEU Ed., 2006</p> <p>Morandi U., Lavini C.: <i>Manuale di Chirurgia Toracica</i>, Athena Medica Ed., 2005</p>
5	Assessment methods and criteria	Oral exam

9) THORACIC SURGERY TRAINEESHIP (1 ECTS)

Teacher: Roberto CRISCI

1	Course objectives	This Module is the practical application of the theoretical concepts of Module 8) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Thoracic Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - apply therapeutical approach to chest diseases - analyse signs and symptoms of chest diseases - evaluate therapeutical effects of surgical treatment of chest disease <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of diagnosis of chest diseases ○ Acquire basic knowledge on surgical treatments of chest diseases
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology.
4	Teaching methods and language	<p>Tutorials, Clinica cases.</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <p>Gibbon JH et al.: <i>Surgery of the Chest</i>, Saunders Ed., 1990</p> <p>Venuta F., Coloni G.F.: <i>Malattie del Torace</i>, SEU Ed., 2006</p> <p>Morandi U., Lavini C.: <i>Manuale di Chirurgia Toracica</i>, Athena Medica Ed., 2005</p>
5	Assessment methods and criteria	Oral exam

10) OTORHINOLARYNGOIATRY (1 ECTS)

Teacher: Marco FUSETTI (Coordinator)

1	Course objectives	The aim of this course is to provide the definitions, the diagnosis and the treatments of the most important diseases of ear, nose and oral cavities.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anatomy of head and neck - Nasal function, rhinitis, sinusitis and nasal polyps - Epistaxis and allergy - Pathology of external, middle ear and NHL

		<ul style="list-style-type: none"> - Otosclerosis, OMC and cholesteatoma - Meniere disease - Tinnitus and vertigo - Adenotonsillitis - OSAS - Pathology of the larynx and dysphonia - Head and neck tumors and salivary glands - Surgery techniques <p>On successful completion of this module, the students should:</p> <ul style="list-style-type: none"> o have profound knowledge of ENT pathologies o have knowledge and understanding signs and symptoms of the disease o understand and explain the different diagnostic options o understand the different therapeutic options o demonstrate skill in the use of clinical tests and ability to make a diagnosis, o demonstrate capacity for reading and understanding other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Lectures, seminars. Language: Italian Ref. Text Books: Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam.

11) OTORHINOLARYNGOLOGY TRAINEESHIP (1 ECTS)

Teacher: Marco FUSETTI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 10) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Otorhinolaryngology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - apply clinical procedures for clinical tests and diagnosis - analyse symptoms and signs of ENT pathologies - evaluate the therapeutic approach and follow up. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of ORL semeiotics for the identification of the most frequent pathologies. o Acquire basic knowledge of the clinical audiology. o Acquire basic knowledge of the principal surgical techniques.
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Tutorials Language: Italian Ref. Text Books: Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam

Programme of "IGIENE GENERALE ED APPLICATA E TECNICHE DI IGIENE E PREVENZIONE" "GENERAL AND APPLIED HYGIENE AND TECHNIQUES OF HYGIENE AND PREVENTION"

This course is composed of five modules: 1) General and applied hygiene and environmental hygiene and prevention techniques, 2) General and applied hygiene and hygiene and prevention techniques Traineeship, 3) Occupational Medicine, 4) Forensic Medicine, 5) Forensic Medicine: Professional Ethics.

D1606, Compulsory

Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 1st semester

Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)

1) GENERAL AND APPLIED HYGIENE AND ENVIRONMENTAL HYGIENE AND PREVENTION TECHNIQUES (2 ECTS)		
Teacher: Sergio TIBERTI (Coordinator)		
1	Course objectives	The course aim to provide the students full knowledge of the methodology of prevention techniques, general and applied hygiene and environmental hygiene for public health.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Principles of hygiene - Preventive medicine and evidence-based prevention - Fundamentals of public health: evidence-based health care, improving population health, screening, health need assessment, the health status of the population, health care evaluation, decision-making in health care - Health protection and communicable disease control - Environmental epidemiology, focus on industrial pollution and population health <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge and understanding of principle and practice of hygiene and public health o understand and explain the challenges of public health in practice, with regard to health of young populations, aging, health inequalities and health policies o demonstrate skill in reading public health reports and ability to profiling public health needs o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know principles of epidemiology and demography
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Gillam S. et al, <i>Essentials of Public Health</i> , Cambridge University Press, 2007 Didactic materials available from the teacher
5	Assessment methods and criteria	Oral exam
2) GENERAL AND APPLIED HYGIENE AND HYGIENE AND PREVENTION TECHNIQUES TRAINEESHIP (2 ECTS)		
Teacher: Sergio TIBERTI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of general and applied hygiene and hygiene and prevention techniques.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Working examples of primary and secondary prevention - Working examples of health need assessment - Demonstrative session of applied epidemiological studies for public health <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of prevention o Acquire basic knowledge of assessment in public health o Acquire basic knowledge of reporting public health issues
3	Prerequisites and learning activities	The student must know principles of epidemiology and demography
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: Didactic materials available from the teacher
5	Assessment methods and criteria	Oral exam
3) OCCUPATIONAL MEDICINE (3 ECTS)		

Teacher: Antonio PAOLETTI		
1	Course objectives	The aim of this course is to provide the students with the knowledge of that branch of medicine that deals with the prevention and treatment of diseases and injuries occurring at work or in specific occupations.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Valuation, treatment, and prevention of disease related to environmental and occupational exposures.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of professional anamnesis, in relation to working conditions and correlated diseases o have knowledge and understanding of diseases and injuries occurring at work or in specific occupations o make judgment on working conditions and correlated diseases o demonstrate skill in diagnosis of occupational diseases and ability to address their treatments o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: - Casula D. et al. <i>Medicina del Lavoro</i> . Monduzzi, 2003 - Gobbato F. <i>Medicina del Lavoro</i> . Masson, 2003
5	Assessment methods and criteria	Oral exam.

4) FORENSIC MEDICINE (2 ECTS)

5) FORENSIC MEDICINE: PROFESSIONAL ETHICS (1 ECTS)

Teacher: Elio NARDECCHIA, Mario ANACLERIO		
1	Course objectives	The goal of this course is to provide the knowledge of the main principles of bioethics and forensic medicine. On successful completion of this module, the students should demonstrate skill in reading medical information into a legal framework and make judgments on basic bioethics and professional ethic issues.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: The forensic medicine as a meeting point between medicine and law. Finality and method. Causation. Thanatology and forensic pathology. The death's ascertainment. Basics of bioethics and professional ethic. Informed consent. The professional secret and the privacy. The report. Failure to assistance. The professional liability within the sanitary activities. The sanitary documentation. Risk management. Criminal Law: imputability and liability. The crimes: concept, classification of the crimes and the constitutive elements. The bodily harm. Civil law: civil capacity and evaluation of the corporal damage. Social Legislation. Insurance medicine.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> - have knowledge and understanding of the basic principles of bioethics and forensic medicine - explain the study and application of scientific and medical knowledge to legal problems, - make judgment on basic bioethics and professional ethic issues - demonstrate skill in reading medical information into a legal framework - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know how anatomy, physiology, pathology, and pharmacology.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Arbarello P, Feola T, Arcangeli M, Vaccaro M. <i>Medicina Legale per le Professioni Sanitarie. Diritto. Deontologia. Legislazione Sociale</i> . Minerva Medica 2010 Feola T, Arcangeli M, Nardecchia E. <i>Appunti di medicina legale</i> . Minerva Medica, febbraio

		2014 Norelli G.A., Buccelli C., Fineschi V. <i>Medicina legale e delle assicurazioni</i> . Piccin Ed. Padova, 2009 Palmieri L., De Ferrari F. <i>Manuale di medicina legale</i> , Giuffrè Ed., Milano, 2013
5	Assessment methods and criteria	Oral exam

Programme of “MEDICINA DELLE ATTIVITA’ MOTORIE” “SPORT MEDICINE”		
This course is composed of four modules: 1) Orthopedics, 2) Rehabilitation Medicine, 3) Sport Traumatology Traineeship, 4) Sport Cardiology Traineeship.		
D1674, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 1st semester		
Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)		
1) ORTHOPEDICS (3 ECTS)		
Teacher: Vittorio CALVISI (Coordinator)		
1	Course objectives	The course aim to provide the students with knowledge of the branch of surgery involving the musculoskeletal system using both surgical and nonsurgical means to treat musculoskeletal trauma, sports injuries, degenerative diseases, infections, tumors, and congenital disorders.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Introduction to musculoskeletal system structure, anatomy, and joint biomechanics - Traumatic musculoskeletal diseases - Bone Diseases and disorders - Chronic arthropaties <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of musculoskeletal system structure, anatomy, and joint biomechanics o have knowledge and understanding of traumatic musculoskeletal diseases o understand and explain injuries and diseases of musculoskeletal system o demonstrate skill care of children with spine and limb deformities, and ability to orthopaedic care for patients of all ages groups o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy and physiology, biomechanics, radiology, anatomical pathology, as well as the use of Evidence-Based Medicine studies in healthcare decision-making.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Mancini A., Morlacchi C. <i>Clinica Ortopedica Manuale Atlante</i> . Piccin ed 2011
5	Assessment methods and criteria	Oral Exam
2) REHABILITATION MEDICINE (3 ECTS)		
Teacher: Gianfranco PROPERZI, Angelo CACCHIO		
1	Course objectives	The course aim to provide the students with knowledge of rehabilitation methods that allow functional recovery in musculoskeletal disorders, neurological, sports injuries, degenerative diseases and their outcomes.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Healing process and rehabilitation program - Functional assessment in rehabilitation medicine - Upper Limb Rehabilitation (Shoulder) - Upper Limb Rehabilitation (Elbow) - Upper Limb Rehabilitation (Wrist) - Lower Limb Rehabilitation (Hip) - Lower Limb Rehabilitation (Knee) - Lower Limb Rehabilitation (Ankle)

		<ul style="list-style-type: none"> - Rehabilitation of the spine (cervical) - Rehabilitation of the Spine (Dorsal) - Rehabilitation of the spine (L-S) - Rehabilitation of the Spine dysmorphisms <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have knowledge and understanding of the goals of rehabilitation for various diseases o applying knowledge and understanding of the main treatment modalities o understand and explain the effect of the rehabilitation process of the disease and the application of the principles of rehabilitation and management of patients o demonstrate skill in critical analysis and ability to direct treatment in diseases in rehabilitation o demonstrate capacity to continue learning by understand other texts on related topic.
3	Prerequisites and learning activities	The student must know anatomy and physiology.
4	Teaching methods and language	<p>Lectures</p> <p>Language: Italian</p> <p>Ref. Text Books: Braddom Randall L. <i>Physical Medicine and Rehabilitation</i>. Ed A. Delfino, 2005 Valobra G.N., Gatto R., Monticone M. <i>Trattato di Medicina Fisica e Riabilitazione</i>. UTET, 2008. Prentice W. E. <i>Rehabilitation Techniques in Sports Medicine</i>. UTET, 2010</p>
5	Assessment methods and criteria	Oral exam

3) SPORT TRAUMATOLOGY TRAINEESHIP (1 ECTS)

Teacher: Vittorio CALVISI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of this branch of medicine that deals with physical fitness and suggest the treatment and prevention of injuries related to sports and exercise.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Joint Clinical examination Shoulder arthroscopy Knee arthroscopy and anterior cruciate ligament reconstruction Knee replacement</p> <p>On successful completion of this module, the student should</p> <p>Learn the techniques of arthroscopy</p> <p>Acquire basic knowledge on many musculoskeletal conditions without surgery, by using medication, exercise and other rehabilitative or alternative therapies.</p> <p>Acquire basic knowledge on recommend surgery if pathological conditions do not respond to other treatments</p>
3	Prerequisites and learning activities	The student must know the clinical, educational, and investigational aspects of athletic injuries to treat athletes playing professional levels, as well as recreational athletes from every age group.
4	Teaching methods and language	<p>Tutorials, practical exercises</p> <p>Language: Italian</p> <p>Ref. Text Books: Mancini A., Morlacchi C. <i>Clinica Ortopedica Manuale Atlante</i>. Piccin ed 2011</p>
5	Assessment methods and criteria	Oral exam

4) SPORT CARDIOLOGY TRAINEESHIP (1 ECTS)

Teacher: Maria PENCO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of sport cardiology.

2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Applications of the basic principles and methods of Clinical Cardiology to the practice of Sports Medicine - Knowledge of the Sports' Medicine Organisation in Italy according to the Law on "Preparticipation Screening of athletes in the agonistic field" and on Application of Law on "Non-agonistic sport's activities" - Discussion of Clinical cases of athletes with cardiovascular abnormalities <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Learn the techniques of Ist and IInd Level examination on Eligibility to Agonistic and Non agonistic sport's activities; o Acquire basic knowledge on IInd level cardiovascular examination on Eligibility to agonistic sport's activities.
3	Prerequisites and learning activities	The student must know the basic notions of effects of exercise on cardiovascular and respiratory systems and the principal adaptative mechanism (Athlete's heart and Physiological hypertrophy)
4	Teaching methods and language	Team work and presentation of clinical cases Language: Italian Ref. Text Books: Zeppilli P. <i>Cardiologia dello Sport</i> CESI Ed. Scient, 2007
5	Assessment methods and criteria	Multiple choice tests evaluation on clinical cases

<p>Programme of "MALATTIE DEL SISTEMA NERVOSO" "NERVOUS SYSTEM DISEASES"</p>		
<p>This course is composed of seven modules: 1) Neurosurgery, 2) Neurosurgery Traineeship, 3) Neuroradiology, 4) Neuroradiology Traineeship, 5) Neurological Sciences, 6) Neurological Semiotics, 7) Neurophysiopathology.</p>		
<p>D1696, Compulsory Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 2nd semester</p>		
<p>Number of ECTS credits: 12 (total workload is 300 hours; 1 credit = 25 hours)</p>		
<p>1) NEUROSURGERY (1 ECTS)</p>		
<p>Teacher: Renato J. GALZIO</p>		
1	Course objectives	The course aim to provide the students with knowledge of the branch of surgery involving the the brain and other parts of the nervous system.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anatomy, physiology and clinical CNS and PNS - Vascular Pathology of the CNS and PNS - Tumor Pathology of the CNS and PNS - Malformation of the CNS and PNS - Alterations of CSF dynamics - Traumatic pathology of the CNS and PNS - Degenerative disease of the spine - Canalicular syndromes <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of general neurosurgery principles o have knowledge and understanding of etiology and pathogenesis of the main nervous system diseases that need neurosurgical treatment o understand and explain pathology observed in practical activities o demonstrate skill in diagnosis of neurosurgical diseases and ability to address to their treatment o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know neuroanatomy, neurophysiology, neurological diseases, general radiology.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books:

		Pagni C.A. <i>Lezioni di Neurochirurgia</i> . Cortina Editore, 1994 Staffa G.: <i>Elementi di Neurochirurgia</i> . Timeo Editore, 2012
5	Assessment methods and criteria	Oral exam
2) NEUROSURGERY TRAINEESHIP (2 ECTS)		
Teacher: Renato J. GALZIO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Neurosurgery.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Neurosurgical case-examples. On successful completion of this module, the student should <ul style="list-style-type: none"> o Learn the techniques of correct neurosurgical diagnosis o Acquire basic knowledge on neurosurgical treatments
3	Prerequisites and learning activities	The student must know neuroanatomy, neurophysiology, neurological diseases, general radiology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: Pagni C.A. <i>Lezioni di Neurochirurgia</i> . Cortina Editore, 1994 Staffa G.: <i>Elementi di Neurochirurgia</i> . Timeo Editore, 2012
5	Assessment methods and criteria	Oral exam
3) NEURORADIOLOGY (1 ECTS)		
Teacher: Massimo GALLUCCI		
1	Course objectives	The course aim to provide the students with knowledge of neuroradiology. At the completion of the course, participants should be able to know which are the main indications to perform a neuroradiological investigation and to address for an intravascular or spinal percutaneous intervention; to know state of the art in morphological and functional imaging of the CNS; to know classification and main imaging aspects of brain and spine malformations, vascular diseases, degenerative, metabolic, inflammatory disorders, brain and spine tumors, trauma, degenerative spine; to know the main possible percutaneous treatments on brain and spine vascular diseases and on spine degenerative pathology..
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: MRI advanced techniques; Spectroscopy; BOLD; DTI; Malformations; Metabolic disease; Vascular pathologies; stroke diagnosis and treatment; Hemorrhages diagnosis and treatment; Tumors; Toxic, inflammatory, Infectious and degenerative diseases; Demyelinating diseases; Spine degenerative diseases: diagnosis and percutaneous treatment; Neurogenic pain: diagnosis and treatment On successful completion of this module, the student should <ul style="list-style-type: none"> - have profound knowledge of neuroimaging and interventional indications - have knowledge and understanding of main semiological aspects of CNS pathologies - understand and explain the role of neuroimaging in diagnosing CNS diseases - understand pathophysiology of CNS diseases - demonstrate skill in addressing patients to neuroradiological investigations and interventions and ability to read and interpret neuroradiological reports, - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know neuroanatomy, neurophysiology, neurological diseases, general radiology.
4	Teaching methods and language	Lectures Language: Italian Ref. Text Books: Andreula C., Cirillo S., Colosimo C., Gallucci M., Scarabino T.: <i>Manuale di RM in Neuroradiologia</i> . Poletto ed., Milano, 2010

		Colosimo C.. <i>Neuroradiologia</i> . Edra, Roma, 2013
5	Assessment methods and criteria	Oral exam
4) NEURORADIOLOGY TRAINEESHIP (2 ECTS)		
Teacher: Massimo GALLUCCI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 3) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Neuroradiology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - advanced neuroimaging and neuroanatomy - Neuroimaging of main neurological disorders - Indications, technique and results of vascular and spinal interventional radiology <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of neuroimaging o Acquire basic knowledge in diagnostic neuroradiology o Acquire basic knowledge in interventional neuroradiology
3	Prerequisites and learning activities	The student must know neuroanatomy, neurophysiology, neurological diseases, general radiology.
4	Teaching methods and language	<p>Tutorials, practical exercises</p> <p>Language: Italian</p> <p>Ref. Text Books: Andreula C., Cirillo S., Colosimo C., Gallucci M., Scarabino T.: <i>Manuale di RM in Neuroradiologia</i>. Poletto ed., Milano, 2010 Colosimo C.. <i>Neuroradiologia</i>. Edra, Roma, 2013</p>
5	Assessment methods and criteria	Oral exam
5) NEUROLOGICAL SCIENCES (3 ECTS)		
Teacher: Antonio CAROLEI		
1	Course objectives	The course aim to provide the students with knowledge of neurological diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Approach to the neurological patient, anatomy and physiology of the nervous system, Neurological symptomatology, instrumental semiotics, Neurological clinical syndromes, The cerebrovascular disease, meningitis and encephalitis, epilepsies, Movement disorders, Dementia, motor neuron diseases, diseases of the muscles and joints muscle, metabolic encephalopathy, demyelinating disorders, myelitis, Neurological complications of internal systemic diseases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have knowledge and understanding of etiology and pathogenesis of neurological diseases o applying knowledge and understanding of of clinical signs of neurological diseases o understand and explain diagnostic procedures o demonstrate skill in diagnosis of neurological diseases and ability to address treatment of the main neurological diseases o demonstrate capacity to continue learning by understand other texts on related topic
3	Prerequisites and learning activities	The student must know anatomy and physiology of Central and Peripheral Nervous Systems.
4	Teaching methods and language	<p>Lectures</p> <p>Language: Italian</p> <p>Ref. Text Books: Lenzi G.L., Di Piero V., Padovani A.: <i>Compendio di Neurologia</i>, Piccin Editore, Padova, 2013 Manzoni G.C., Torelli P.: <i>Neurologia</i>, Società Editrice Esculapio, Bologna, 2012 Berardelli A., Cruccu G.: <i>La Neurologia della Sapienza</i>, Società Editrice Esculapio, Bologna, 2012</p>

5	Assessment methods and criteria	Oral exam
6) NEUROLOGICAL SEMEITOTICS (1 ECTS)		
Teacher: Carmine MARINI		
1	Course objectives	The course aim to provide the students with knowledge of neurological semeiotics.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - General clues in Neurological semeiotics - Cranial nerves - Motility - Sensitivity - Symbolic functions - Consciousness - Memory - Thought and mood - Lobar syndromes - Brainstem syndromes - Multiple cranial nerve syndromes - Cerebellar syndromes - Spinal syndromes - Peripheral nerve semeiotics - Muscular semeiotics <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have knowledge and understanding of the neurological signs and symptoms o applying knowledge and understanding to neurological diagnosis o understand and explain pathophysiology of neurological signs and symptoms o demonstrate skill in assessing neurological signs and symptoms and ability to interpret semeiotics o demonstrate capacity to continue learning by understand other texts on related topic
3	Prerequisites and learning activities	The student must know anatomy and physiology of Central and Peripheral Nervous Systems.
4	Teaching methods and language	<p>Lectures Language: Italian Ref. Text Books: Bonavita V, Di Iorio G. <i>Neurologia Clinica: diagnosi e terapia</i>. C. G. Edizioni Medico Scientifiche, 2007 Loeb C., Favale E., <i>Neurologia di Fazio Loeb</i>, Roma, Società Editrice Universo, 2003 Ropper A.H., Brown R.H., <i>Adams e Victor Principi di Neurologia</i>, McGraw-Hill, Ultima Edizione (2009).</p>
5	Assessment methods and criteria	Oral exam
7) NEUROPHYSIOPATHOLOGY (2 ECTS)		
Teacher: Carmine MARINI		
1	Course objectives	The course is aimed to give to the student the basic knowledge on the potential of neurophysiological exams and on their clinical indication. The student, at the end of the course should be able to identify clinical situations in which neurophysiological exams may be helpful in the management of the patient and to interpret the results for the purpose of clinical diagnoses and of treatment choice and monitoring.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Methodology, interpretation and clinical application of Electroencephalogram in the context of epileptic disorders, degenerative diseases, loss of consciousness e death ascertainment. Methodology, interpretation and clinical application of electromyography in spinal cord, peripheral nerve and muscle diseases. Methodology, interpretation and clinical application of Evoked potentials in multiple Sclerosis, degenerative disease, coma, and rehabilitation.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of indications of neurophysiological exams; o have knowledge and understanding of methodology of neurophysiological exams;

		<ul style="list-style-type: none"> ○ understand and explain meaning of semeiology of neurophysiological exams; ○ understand ○ demonstrate skill in interpreting results of of neurophysiological exams and ability to identify indications to perform those exams;; ○ demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy and physiology of Central and Peripheral Nervous Systems and of principal neurological diseases
4	Teaching methods and language	<p>Lectures</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <p>Bonavita V, Di Iorio G. <i>Neurologia Clinica: diagnosi e terapia</i>. C. G. Edizioni Medico Scientifiche, 2007</p> <p>Loeb C., Favale E., <i>Neurologia di Fazio Loeb</i>, Roma, Società Editrice Universo, 2003</p> <p>Ropper A.H., Brown R.H., <i>Adams e Victor Principi di Neurologia</i>, McGraw-Hill, Ultima Edizione (2009).</p>
5	Assessment methods and criteria	Oral and written exam

<p>Programme of “PEDIATRIA”</p> <p>“PEDIATRICS”</p>		
<p>This course is composed of three modules: 1) Pediatrics, 2) Auxology, 3) Pediatrics Traineeship.</p>		
<p>D1692, Compulsory</p>		
<p>Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 2nd semester</p>		
<p>Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)</p>		
<p>1) PEDIATRICS (5 ECTS)</p> <p>2) AUXOLOGY (1 ECTS)</p>		
<p>Teacher: Giovanni NIGRO (Coordinator), Giovanni FARELLO</p>		
1	Course objectives	The course aim to provide the students with theoretical and practical basic information in Pediatrics .
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - The newborn – Nutrition -The nutrient deficiencies – Vaccinations - The preterm infant - The immature newborn - Assistance in the delivery room - The neonatal respiratory disease – Jaundice - Main genetic and chromosomal disorders (Down, Turner, Klinefelter) - Fever - Pubertal development - Obesity - Maternal-fetal infections - Herpesvirus infections - Exanthematic infections - Mononucleosis and mononucleosis-like diseases - Acute and chronic gastroenteritis- Food allergies- Gastro-esophageal reflux – - Laryngitis and pseudocroup - Bronchiolitis - Bronchial asthma – Typical and atypical pneumonia – Cystic fibrosis - Rheumatic disease - Atopy – Arthritis – Kawasaki disease – - Hematuria - Acute and chronic glomerulonephritis - Kidney failure – Nephrosis - Infections of the urinary tract - Vesicoureteral reflux <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of basic notions of Pediatrics ○ have knowledge and understanding of development and nutrition of the children ○ understand and explain anamnestic and clinical evaluation ○ demonstrate skill in approaching the infants and ability to diagnosis and therapy of the main pediatric diseases ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know parameters of the normal and pathologic infant.
4	Teaching methods and language	<p>Lectures.</p> <p>Language:Italian</p> <p>Ref. Text Books:</p> <p>Burgio G.R.: Burgio G.R., Martini A., Nespoli L., Notarangelo L.D. <i>Pediatria Essenziale</i>.</p>

		<i>Trattato di Clinica e Terapia</i> , Edi Ermes, 2013
5	Assessment methods and criteria	Oral Exam
3) PEDIATRICS TRAINEESHIP (2 ECTS)		
Teacher: Giovanni NIGRO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1-2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Pediatrics.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anamnesis - Clinical examination - Diagnosis and Therapy <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of collecting data o Acquire basic knowledge of clinical evaluation o Acquire basic knowledge of diagnosis and therapy
3	Prerequisites and learning activities	The student must know physiological and pathological notions.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: Burgio G.R.: Burgio G.R., Martini A., Nespoli L., Notarangelo L.D. <i>Pediatria Essenziale. Trattato di Clinica e Terapia</i> , Edi Ermes, 2013
5	Assessment methods and criteria	Oral exam

Programme of “PSICHIATRIA DELL’ADULTO E DELL’ETÀ EVOLUTIVA” “PSYCHIATRY AND CHILD NEUROPSYCHIATRY”		
This course is composed of six Modules: 1) Psychopathology, 2) Psychiatric Diseases, 3) Treatments of Psychiatric Diseases 4) Psychiatric Diseases Traineeship, 5) Child Neuropsychiatry, 5) Child Neuropsychiatry Traineeship		
D1834, Compulsory		
Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 2nd semester		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1) PSYCHOPATHOLOGY (2 ECTS)		
2) PSYCHIATRIC DISEASES (2 ECTS)		
3) TREATMENTS OF PSYCHIATRIC DISEASES (3 ECTS)		
Teacher: Rita RONCONE (Coordinator), Massimo CASACCHIA, Alessandro ROSSI		
1	Course objectives	The goal of this course is to provide the knowledge of the organization of community-based mental health services in Italy, and the main psychiatric disorders and their pharmacological and psychosocial treatments. On successful completion of this module, the students should have the understanding of the main psychiatric disorders and their treatments, and of the community-based mental health services. Also they should be able to appropriately address their mentally distressed patients to community-based mental health services for assessment, diagnosis and treatment.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - the organization of community-based mental health services in Italy: Low 180, compulsory psychiatric treatments - the patient observation: appearance (dress; grooming; psychomotor activity; relation to the interviewer; speech; eye contact) - disorders of perception, disorders of thought, disorders of memory, disorders of intellectual function, disorders of emotion, disorders of consciousness - the psychiatric interview: mental state examination - Psychiatric classification of mental disorders (DSM-V) - Schizophrenia Spectrum and other psychotic disorders; Bipolar and related Disorders;

		<p>Depressive Disorders; Anxiety Disorders; Obsessive-Compulsive and related Disorders; Trauma – and Stressor-Related Disorders; Somatic symptom and related Disorders; Feeding and eating Disorders; Substance-related and addictive Disorders; Neurocognitive Disorders; Personality Disorders</p> <ul style="list-style-type: none"> - Assessment Measures - Cultural Formulation - Psychiatric treatments: psychopharmacological treatments (antidepressants, anxiolytics, antipsychotics, mood stabilizers), psychotherapies (Cognitive-Behavioral Therapy) and psychosocial interventions. - Evidence-Based Psychiatry. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have knowledge and understanding of the organization of the psychiatric care in Italian community-based services and the main psychiatric disorders and their pharmacological, psychotherapeutic and psychosocial treatments o apply and explain the diagnostic criteria of the main psychiatric disorders o discriminate emotional disturbances from psychiatric disorders and psychiatric symptoms as primary or related to somatic disorders o demonstrate skill in communication with patients and ability to refer them to appropriate care services and professionals; in referring to and dealing with the multiprofessional psychiatric team o demonstrate capacity for reading and understand other texts and consult scientific database on related topics.
3	Prerequisites and learning activities	The student must know neuroanatomy, central nervous system physiology, general psychology.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <p>American Psychiatric Association, <i>Diagnostic and Statistical Manual of Mental Disorders-V</i>, Arlington, VA, American Psychiatric Association, 2013</p> <p>Biondi M, Carpiniello B, Muscettola G, Placidi GF, Rossi A, Scarone S. <i>Manuale di psichiatria – 1st Edition</i>. Elsevier, Masson, 2009</p> <p>Lectures notes by the teacher.</p>
5	Assessment methods and criteria	Oral/Written exam
4) PSYCHIATRIC DISEASES TRAINEESHIP (1 ECTS)		
Teacher: Rita RONCONE		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1-2-3) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Psychiatry.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - clinical cases (psychiatric ward, videos) of main psychiatric diseases - utilization of psychiatric rating scales - psychopharmacological prescriptions <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of conducting psychiatric structured interviews o Acquire basic knowledge of the main psychiatric rating scales o Acquire basic knowledge of psychopharmacological prescriptions
3	Prerequisites and learning activities	The student must know neuroanatomy, central nervous system physiology, general psychology.
4	Teaching methods and language	<p>Presentation of clinical cases, video of clinical cases, practical exercises in assessin psychopathology</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - American Psychiatric Association, <i>Diagnostic and Statistical Manual of Mental Disorders-V</i>, Arlington, VA, American Psychiatric Association, 2013 - Biondi M, Carpiniello B, Muscettola G, Placidi GF, Rossi A, Scarone S. <i>Manuale di psichiatria – 1st Edition</i>. Elsevier, Masson, 2009

5	Assessment methods and criteria	Oral/Written exam
5) CHILD NEUROPSYCHIATRY (3 ECTS)		
Teacher: Enzo SECHI		
1	Course objectives	The course provides: a) the knowledge of mental health in childhood and adolescence, b) different neurological and psychiatric disorders, c) main therapeutic intervention (pharmacological, rehabilitation interventions and main psychotherapeutic means, d) basic organization of Italian health services for developmental age.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Classification and Diagnosis in Child and Adolescent Neuro-Psychiatry - Main points of maturation of CNS and of development of cognitive ,emotional and affective developmente childhodd and adolescence - Cerebral Palsies and other disturbances of motor development - Epilepsy and other consulative disorders - Neurodevelopmental Disorders (Intellectual Disabilities) - Neurodevelopmental Disorders (Pervasive and specific disorders) - Attention-Deficit/Hyperactivity - Anxiety and depressive disorders - Trauma and stressor Related Disorders - Disruptive,Impulsive Control and Conduct Disorders - Obsessive compulsive disorders. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of mental and psychological problems and mental development of children and adolescents linked to medical disturbances o understand and explain how these problems may be fitted in health services and in social institutions o demonstrate skill in diagnosis and ability to choice efficient health measures o demonstrate skill in communication with young patients and their caregivers. o demonstrate capacity for reading and understand other texts on related topics
3	Prerequisites and learning activities	The student must know basic principles of general and developmental psychology, genetics , general neuropsychology and neurosciences.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders-V, Arlington, VA, American Psychiatric Association, 2013. - Guidetti V. <i>Fondamenti di Neuropsichiatria Infantile dell'Infanzia e dell'Adolescenza</i>, Il Mulino 2005, Bologna - Camaioni L. <i>Manuale di psicologia dello Sviluppo</i>, Il Mulino Bologna,1999
5	Assessment methods and criteria	Oral exam
6) CHILD NEUROPSYCHIATRY TRAINEESHIP (1 ECTS)		
Teacher: Enzo SECHI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 5) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Child Neuropsychiatry.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Neurological exam in children - Psychiatric interview and Clinical observation - Interview with parents <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of of interview o Acquire basic knowledge of normal neurological and psychological development o Acquire basic knowledge of diagnostic and therapeutic clinical course
3	Prerequisites and learning activities	The student must know basic principles of general and developmental psychology, genetics , general neuropsychology and neurosciences.

4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders-V , Arlington, VA, American Psychiatric Association, 2013. - Guidetti V. <i>Fondamenti di Neuropsichiatria Infantile dell'Infanzia e dell'Adolescenza</i> , Il Mulino 2005, Bologna - Camaioni L. <i>Manuale di psicologia dello Sviluppo</i> , Il Mulino Bologna, 1999.
5	Assessment methods and criteria	Oral exam

Programme of "DISCIPLINE MEDICO-CHIRURGICHE SPECIALISTICHE"

"SPECIALIZED MEDICAL-AND SURGICAL DISCIPLINES"

This course is composed of eleven modules: 1) Audiology, 2) Ophthalmology, 3) Ophthalmology Traineeship, 4) Odontostomatological Diseases, 5) Odontostomatological Diseases Traineeship, 6) Maxillo-Facial Surgery, 7) Maxillo-Facial Surgery Traineeship, 8) Thoracic Surgery, 9) Thoracic Surgery Traineeship 10) Otorhinolaringoiatry, 11) Otorhinolaringoiatry Traineeship.

D2180, Compulsory

Single Second Cycle Degree in MEDICINE & SURGERY, 5th year, 1st semester

Number of ECTS credits: 15 (total workload is 375 hours; 1 credit = 25 hours)

1) AUDIOLOGY (1 ECTS)

Teacher: Maria LAURIELLO

1	Course objectives	The course aim to provide the students with the study of hearing disorders and the rehabilitation of people with hearing impairments.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Anatomy and physiology of the paranasal sinuses Acute and chronic rhinitis Epistaxis Allergic rhinitis and nasal hypersensitivity nonspecific The acute and chronic rhino-sinusitis The nasal polyposis The acute and chronic laryngitis The dysphonia caused by nodules and polyps of the larynx The precancerous and cancer of the larynx</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of clinical signs of acute rhino-sinusitis and laryngitis o have knowledge and understanding the precancerous and cancer of the larynx o understand and explain the nasal polyposis and the dysphonia caused by nodules and polyps of the larynx o demonstrate skill in clinical diagnosis and ability to perform current medical treatment for the above mentioned pathologies o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam

2) OPHTHALMOLOGY (2 ECTS)

Teacher: Marco CIANCAGLINI

1	Course objectives	The goal of this Course is to provide the students with scientific knowledge enabling them to understand the main ophtalmological diseases.
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2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Anatomy of the visual system, physiology of vision, refraction defects, cornea, lens, uvea, retina, optic nerve diseases, systemic diseases and eye</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of etiology and pathogenesis of ophthalmological diseases ○ have knowledge and understanding of ophthalmology principles ○ understand and explain pathology observed in practical activities ○ demonstrate skill in diagnosis of ophthalmological diseases and ability to address the treatments of main ophthalmological diseases ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology and pharmacology.
4	Teaching methods and language	<p>Lectures. Language: Italian Ref. Text books: - Bagolini et al. <i>Oftalmologia clinica</i>. Monduzzi, 2006 - Kanski J. <i>Oftalmologia Clinica</i>, Elsevier – Masson, 2008</p>
5	Assessment methods and criteria	Oral exam
3) OPHTHALMOLOGY TRAINEESHIP (1 ECTS)		
Teacher: Marco CIANCAGLINI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 2) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Eye Diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Eye examinations - Cranial nerve II examination - Use of the ophthalmoscope <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of the eye examinations ○ Acquire basic knowledge on medical treatments ○ Acquire basic knowledge on surgical treatments
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology and pharmacology.
4	Teaching methods and language	<p>Tutorials, practical exercises Language: Italian Ref. Text Books: - Bagolini et al. <i>Oftalmologia clinica</i>. Monduzzi, 2006 - Kanski J. <i>Oftalmologia Clinica</i>, Elsevier – Masson, 2008</p>
5	Assessment methods and criteria	Oral exam
4) ODONTOSTOMATOLOGICAL DISEASES (2 ECTS)		
Teacher: Roberto GATTO		
1	Course objectives	The course of pediatric dentistry is designed to provide the student with the theoretical knowledge and practical examples needed to prevent, detect and treat abnormalities and oral diseases. As part of the course the student will gain knowledge of major diseases, congenital or acquired, acute or chronic, with particular regard to caries, dental traumatology and the malocclusions. It also will give special emphasis to the oral manifestations of systemic diseases and frameworks pertaining to oral surgery, odontogenic pathologies early onset.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Embryology and anatomy of the oral cavity - Developmental Abnormalities - Cysts of the jaws - Caries - The periodontitis

		<ul style="list-style-type: none"> - The malocclusion - The oral cancer - The salivary glands. <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o have profound knowledge of diagnosis and clinical practice o have knowledge and understanding therapeutic elements, o understand and explain oral pathology and preventive dentistry in paediatric dentistry o demonstrate skill in paediatric dentistry and ability to professional care , o demonstrate capacity for reading and understand other texts on related topics
3	Prerequisites and learning activities	<p>It is considered essential to study issues relating to the embryology, physiology, pathology, general dental and focusing on the growth and development of physiological and pathological aging of the entire stomatognathic system.</p> <p>In specific it is necessary a good knowledge and understanding dental embryology, morphology of the deciduous teeth, the processes of craniofacial development, and physiology of the stomatognathic system.</p>
4	Teaching methods and language	<p>Lectures.</p> <p>Language: Italian</p> <p>Ref. Text Books: Valletta G., Bucci E., Matarasso S. <i>Odontostomatologia</i>. Piccin-Nuova Libreria, 1998</p>
5	Assessment methods and criteria	Oral exam.

5) ODONTOSTOMATOLOGICAL DISEASES TRAINEESHIP (1 ECTS)

Teacher: Roberto GATTO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Odontostomatological Diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> -Children's oral health and dental care. -Preventive dentistry and cranium-mandibular dysfunctions <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire basic knowledge of diagnosis and clinical practice o have knowledge and understanding of maxillofacial dysmorphism, o have profound knowledge of diagnosis and clinical practice
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	<p>Tutorials</p> <p>Language: Italian</p> <p>Ref. Text Books: Valletta G., Bucci E., Matarasso S. <i>Odontostomatologia</i>. Piccin-Nuova Libreria, 1998</p>
5	Assessment methods and criteria	Oral exam

6) MAXILLO-FACIAL SURGERY (2 ECTS)

Teacher: Tommaso CUTILLI		
1	Course objectives	The goal of this Course is to provide the students with scientific knowledge enabling them to understand the main fields of oro-maxillofacial surgery. The Course supplies clinical elements for diagnosis and treatment of benign and malignant tumors, facial and cranio-facial trauma, facial dysmorphism and congenital deformities, the wide osseous pathology, temporomandibular joint disorders.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Surgical anatomy of maxillofacial region - Tumors of oral cavity, middle third, mandible, salivary glands, facial skin. - Cervical nodes and disease - Facial Trauma: fractures of mandible, maxillary, middle third, orbita, nasal-ethmoidal complex. Craniofacial fractures. - Facial dysmorphism: mandibular and/or maxillary defects and excesses, open bite,

		<p>asimmetry.</p> <ul style="list-style-type: none"> - Congenital deformities: cleft lip and palate, First arch Syndrome, Franceschetti Syndrome, facial cleft, hemyfacial microsomia. - Mandibular and Maxillary osteolytic lesions - Osteoradionecrosis and BRONJ - Temporomandibular disorders <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge and understanding of early clinical signs of oral tumors o have knowledge and understanding of maxillofacial dysmorphism, o understand and explain the osteolytic maxillary lesions o understand treatment of Temporomandibular Joint Pathology o demonstrate skill in orthopedic techniques for treatment of dento-maxillary trauma o be able to understand the diagnostical imaging o be able to perform a biopsy o be able to apply dental arch o develop skills for the critical evaluation of scientific literature, research and new products for the continuous up-dating of their knowledge and competencies.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy and pathology of oral and maxillofacial region
4	Teaching methods and language	<p>Lectures, team work, exercises, home work, report.</p> <p>Language: Italian</p> <p>Ref. Text books:</p> <ul style="list-style-type: none"> -Italian Society of Maxillofacial Surgery “ <i>Maxillofacial Surgical Pathology</i> “ 2007, Minerva Ed Turin - Italy -Brusati R, Sesenna E: <i>Chirurgia delle deformità mascellari</i>. 2008, Masson Ed, Milano
5	Assessment methods and criteria	Oral exam

7) MAXILLO-FACIAL SURGERY TRAINEESHIP (1 ECTS)

Teacher: Tommaso CUTILLI

1	Course objectives	<p>This Module is the practical application of the theoretical concepts of Module 6) of which constitutes an integral part. The goal of Traineeship is to provide the students the ability for the management of the main maxillofacial pathologies (traumatology, oncology, facial dysmorphism and deformities, TMJ disorders, osseous lesions).</p> <p>They will be able to apply the basic principles and methods of Maxillo-Facial Surgery.</p>
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Maxillofacial Traumatology - Maxillofacial Oncology - Maxillofacial Dysmorphism - Temporomandibular disorders <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn to perform the clinical examination of maxillofacial patient o Learn the techniques of biopsy o Acquire basic knowledge of the procedure of treatment of the mandibular luxation o Acquire basic knowledge of the procedure of application of dental arch bar for Inter-Maxillary Fixation (IMA) o Acquire basic knowledge of the diagnostic procedure of TMJ disorders.
3	Prerequisites and learning activities	The student must know the basic notions of anatomy, pathology and clinic elements of oral and maxillofacial region.
4	Teaching methods and language	<p>Examination, discussion and treatment of the clinical cases. Access to the surgical room.</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> -Italian Society of Maxillofacial Surgery “ <i>Maxillofacial Surgical Pathology</i> “ 2007, Minerva Ed Turin - Italy -Brusati R, Sesenna E: <i>Chirurgia delle deformità mascellari</i>. 2008, Masson Ed, Milano
5	Assessment methods and criteria	Oral exam

8) THORACIC SURGERY (2 ECTS)

Teacher: Roberto CRISCI		
1	Course objectives	To train the student to acquire knowledge and skills about making the diagnostic and treatment of diseases of the chest of surgical interest.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Neoplasm of the lung and pleural tumors: ethiology, physiopathology, diagnosis, staging and surgical treatment. - Pleural effusions: pleural empyema, haemothorax, paraneoplastic effusions: diagnosis and surgical therapy. - Chest trauma: blunt and open, trauma parietal and / or visceral Voucher chest, the fractures of the sternum, pneumothorax, post-traumatic, post-traumatic hemothorax, chylothorax, broken iris, the ruptures of the airways, the breaking of the large intrathoracic vessels. - Thoracic Endoscopy: Bronchoscopy and bronchoscopy, videothoracoscopy diagnostic mediastinoscopy and mediastinotomy. - The Videothoracoscopy Operations (VATS): indications, advantages, limitations, technique, results. - Neoplasm and functional diseases of esophagus: physiopathology, diagnosis and therapy. - The pulmonary ventilation, diffusion, perfusion, pulmonary, respiratory mechanics, control of breathing. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of chest surgical disease o have knowledge and understanding of signs and symptoms of chest diseases o understand and explain physiopathology of chest diseases o understand the laboratory and x-ray examinations about chest diseases o demonstrate skill in analyse of cases and ability to choose of treatment programs o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology.
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books: Gibbon JH et al.: <i>Surgery of the Chest</i> , Saunders Ed., 1990 Venuta F., Coloni G.F.: <i>Malattie del Torace</i> , SEU Ed., 2006 Morandi U., Lavini C.: <i>Manuale di Chirurgia Toracica</i> , Athena Medica Ed., 2005
5	Assessment methods and criteria	Oral exam
9) THORACIC SURGERY TRAINEESHIP (1 ECTS)		
Teacher: Roberto CRISCI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 8) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Thoracic Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - apply therapeutical approach to chest diseases - analyse signs and symptoms of chest diseases - evaluate therapeutical effects of surgical treatment of chest disease <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of diagnosis of chest diseases o Acquire basic knowledge on surgical treatments of chest diseases
3	Prerequisites and learning activities	The student must know anatomy, physiology, pathology.
4	Teaching methods and language	Tutorials, Clinica cases. Language: Italian Ref. Text Books: Gibbon JH et al.: <i>Surgery of the Chest</i> , Saunders Ed., 1990

		Venuta F., Coloni G.F.: <i>Malattie del Torace</i> , SEU Ed., 2006 Morandi U., Lavini C.: <i>Manuale di Chirurgia Toracica</i> , Athena Medica Ed., 2005
5	Assessment methods and criteria	Oral exam
10) OTORHINOLARYNGOIATRY (1 ECTS)		
Teacher: Marco FUSETTI (Coordinator)		
1	Course objectives	The aim of this course is to provide the definitions, the diagnosis and the treatments of the most important diseases of ear, nose and oral cavities.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anatomy of head and neck - Nasal function, rhinitis, sinusitis and nasal polyps - Epistaxis and allergy - Pathology of external, middle ear and NHL - Otosclerosis, OMC and cholesteatoma - Meniere disease - Tinnitus and vertigo - Adenotonsillitis - OSAS - Pathology of the larynx and dysphonia - Head and neck tumors and salivary glands - Surgery techniques <p>On successful completion of this module, the students should:</p> <ul style="list-style-type: none"> o have profound knowledge of ENT pathologies o have knowledge and understanding signs and symptoms of the disease o understand and explain the different diagnostic options o understand the different therapeutic options o demonstrate skill in the use of clinical tests and ability to make a diagnosis, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Lectures, seminars. Language: Italian Ref. Text Books: Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam.
11) OTORHINOLARYNGOIATRY TRAINEESHIP (1 ECTS)		
Teacher: Marco FUSETTI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 10) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Otorhinolaryngoiatry.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - apply clinical procedures for clinical tests and diagnosis - analyse symptoms and signs of ENT pathologies - evaluate the therapeutic approach and follow up. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of ORL semeiotics for the identification of the most frequent pathologies. o Acquire basic knowledge of the clinical audiology. o Acquire basic knowledge of the principal surgical techniques.
3	Prerequisites and learning activities	The student must know anatomy and physiology of head and neck district and auditory function.
4	Teaching methods and language	Tutorials Language: Italian Ref. Text Books:

		Albera R, Rossi G. <i>Otorinolaringoiatria</i> , Edizioni Minerva Medica, 2013
5	Assessment methods and criteria	Oral exam

Programme of “CHIRURGIA GENERALE, ENDOCOPICA E TRAPIANTI”		
“GENERAL SURGERY, ENDOSCOPY AND TRANSPLANTATION”		
This course is composed of fourteen Modules: 1) General Surgery, 2) General Surgery traineeship, 3) Surgical Endoscopy, 4) Surgical Endoscopy traineeship, 5) Geriatric Surgery I, 6) Geriatric Surgery II, 7) Geriatric Surgery traineeship, 8) Clinical Transplantation, 9) Semiotics of Transplantation and of patient waiting for transplantation, 10) Clinical Transplantation traineeship, 11) Vascular pathology of the venous system, 12) Aortic and lower limbs vascular pathology, 13) acute and chronic cerebrovascular insufficiency, 14) Vascular pathology of the venous system traineeship		
D1844, Compulsory		
Single Second Cycle Degree in MEDICINE 6 SURGERY, 6th year, 1st semester		
Number of ECTS credits: 16 (total workload is 400 hours; 1 credit = 25 hours)		
1) GENERAL SURGERY (2 ECTS)		
Teacher: Gianfranco AMICUCCI		
1	Course objectives	The General Surgery course provides an overview of the principles of surgical pathology. The goal of this course is to provide the student with knowledge adequate to identify the most common pathology of surgical interest and apply the principles for a correct diagnosis and therapy.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>The breast</p> <ul style="list-style-type: none"> ✓ Anatomy ✓ Breast development and physiology ✓ Diagnosis of the breast disease ✓ Benign breast tumors and related diseases ✓ Malignant tumor of the breast <p>The thyroid gland</p> <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the thyroid diseases ✓ Thyroiditis ✓ Nodular goiter, benign and malignant neoplasms <p>The esophagus</p> <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the esophagus diseases ✓ Diverticula of the esophagus ✓ Disorders of the esophageal motility ✓ Hiatal hernia and gastroesophageal reflux disease ✓ Tumors of the esophagus <p>The stomach</p> <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the stomach diseases ✓ Acute and chronic gastritis ✓ Peptic ulcer disease ✓ Adenocarcinoma of the stomach <p>The Colon and rectum</p> <ul style="list-style-type: none"> ✓ Anatomy and physiology ✓ Diagnosis of the colon and rectum diseases ✓ Benign neoplasm of the colon end rectum ✓ Carcinoma of the colon and rectum <p>The acute abdomen</p> <ul style="list-style-type: none"> ✓ Clinical consideration and diagnosis of the acute abdomen ✓ Peritonitis ✓ Acute obstruction of the GI tract. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Acquire knowledge and understanding of general surgery principles,

		<ul style="list-style-type: none"> o Be able to apply knowledge and understanding of general surgery principles, o Be able to make informed judgments and choices on surgical pathology observed in practical activities, o Be able to detect and evaluate diseases of surgical interest and apply principles of surgical therapy, o Be able to continue learning and integrate information from lectures and practical activities on general surgery topics.
3	Prerequisites and learning activities	The student must know human anatomy, physiology and pathology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: - Townsend C.M., <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam
2) GENERAL SURGERY TRAINEESHIP (2 ECTS)		
Teacher: Gianfranco AMICUCCI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of General Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Surgery of:</p> <ul style="list-style-type: none"> - esophagus - stomach - pancreas - biliary diseases - inflammatory bowel diseases - colon and rectum. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of clinical evaluation of a surgical patients o Acquire basic knowledge of main surgical procedures
3	Prerequisites and learning activities	The student must know human anatomy, physiology and pathology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Townsend C.M., <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam
3) SURGICAL ENDOSCOPY (2 ECTS)		
Teacher: Maria Antonietta PISTOIA		
1	Course objectives	The Surgical Endoscopy course provides an overview of the principles of surgical endoscopy. The goal of this course is to provide the student with knowledge of GI Endoscopy indications, techniques and complications; to recognize the main diseases of endoscopic interest, knowing the clinical presentation, the diagnostic and therapeutic process.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Upper GI diseases of endoscopic interest (esophageal motor disorders, esophagitis, GERD, Barrett's Esophagus, esophageal diverticula, foreign bodies, gastritis, peptic ulcer, upper GI bleeding, neoplasms), diagnosis and treatment; - Lower GI diseases of endoscopic interest (colonic polyps, CRC and screening program, IBD, diverticular disease and diverticulitis, Meckel's diverticula, lower GI bleeding, neoplasms), diagnosis and treatment; - Liver, biliary and pancreatic diseases (gallbladder and biliary lithiasis, cholestasis, jaundice, acute and chronic pancreatitis, neoplasms), diagnosis and treatment; - Emergency in GI Endoscopy (causes, timing, patient management, differential diagnosis, diagnostic and therapeutic process); - GI Endoscopy techniques and new technologies (NBI, Confocal Endomicroscopy,

		Colangiography, Laser Litotripsy, Stents, EUS). On successful completion of this module, the student should <ul style="list-style-type: none"> ○ Acquire knowledge and understanding of endoscopy surgery principles, ○ Be able to apply knowledge and understanding of endoscopy surgery principles, ○ Be able to make informed judgments and choices on surgical endoscopy pathology observed in practical activities, ○ Be able to detect and evaluate diseases of endoscopic surgical interest and apply principles of surgical endoscopy therapy, ○ Be able to continue learning and integrate information from lectures and practical activities on endoscopic surgery topics.
3	Prerequisites and learning activities	The student must know human anatomy, physiology and pathology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: - Townsend C.M., <i>SabinstonTextbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam
4) SURGICAL ENDOSCOPY TRAINEESHIP (2 ECTS)		
Teacher: Maria Antonietta PISTOIA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 3) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Surgical Endoscopy.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - diagnostic and operative endoscopic procedures, such as EGDS, RSCS, ERCP, PEG On successful completion of this module, the student should <ul style="list-style-type: none"> ○ Acquire basic knowledge of endoscopic procedures (indications, contraindications and techniques); ○ Acquire basic knowledge of patient management (eg. concomitant anticoagulant oral therapy, pre- and post-endoscopy therapy).
3	Prerequisites and learning activities	The student must know human anatomy, physiology and pathology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Townsend C.M., <i>SabinstonTextbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam
5-6) GERIATRIC SURGERY (2 ECTS)		
Teacher: Sergio LEARDI		
1	Course objectives	The Geriatric Surgery course provides an overview of the principles of geriatric surgery. The goal of this course is to provide the student with knowledge of geriatric surgery indications, techniques and complications; to recognize the main diseases of geriatric interest, knowing the clinical presentation, the diagnostic and therapeutic process.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Risk factors in elderly surgery, abdominal wall hernia, small bowel ischemia, ischemic colitis, neoplasm in elderly, gallbladder stone, minimally invasive surgery, wound care, hyperthyroidism. On successful completion of this module, the student should: <ul style="list-style-type: none"> ○ have profound knowledge of characteristic surgical diseases in elderly ○ have knowledge and understanding of clinical signs of diseases ○ understand and explain diagnostic procedures ○ understand the indications of surgery for single patient ○ demonstrate skill in clinical examination of elderly patients and ability to plan the diagnostic and therapeutic procedures

		o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the basic notion of human anatomy, physiology and pathology, and the diseases of surgical interest and gerontology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: - Townsend C.M., <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam
7) GERIATRIC SURGERY TRAINEESHIP (1 ECTS)		
Teacher: Sergio LEARDI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 5-6) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Geriatric Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Hernia of abdominal hernia - Wound care - Gallbladder stones. On successful completion of this module, the student should o Learn the techniques of clinical examination o Acquire basic knowledge instrumental diagnosis o Acquire basic knowledge minimal non invasive surgery
3	Prerequisites and learning activities	The student must know the basic notion of human anatomy, physiology and pathology, and the diseases of surgical interest and gerontology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Townsend C.M., <i>Sabinston Textbook of Surgery</i> , 19 th Edition, Elsevier, 2012.
5	Assessment methods and criteria	Oral exam
8) CLINICAL TRANSPLANTATION (1 ECTS)		
9) SEMIOTICS OF TRANSPLANTATION AND OF PATIENT WAITING FOR TRANSPLANTATION (1 ECTS)		
Teacher: Antonio FAMULARI, Francesco PISANI		
1	Course objectives	The educational goals of this module are to provide the student with - an understanding of the common problems of patients with end stage organ disease, both pre- and post- transplantation, - patients who have undergone a transplant procedure, - transplantation pharmacotherapy; - basic clinical decision-making skills in this patient population applicable to their future practice.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: End stage organ failure, indications to organ replacement, organ replacement techniques, complications of organ replacement; histocompatibility, rejection, immunosuppressive therapy; donation, retrieval, procurement and preservation of organs; transplantation of kidney, pancreas, liver, heart, lung and bowel, multi-organ transplantation; artificial organs. On successful completion of this module, the student should: o have profound knowledge of criteria for brain death, donation after deceased cardiac death, suitability, indications and contraindications for living donation, deceased-donor organ procurement and transplant; o have knowledge and understanding of surgical procedures of living donation, organ procurement and transplant; o understand and explain transplant immunology, immunosuppression pharmacology,

		<p>medical, drug-related and surgical complications after donation and transplant surgery;</p> <ul style="list-style-type: none"> o understand principles of organ allocation process, immunosuppressive regimens, ethical dilemmas/issues regarding donation and transplantation; o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know principles of surgery, immunology and pharmacology. The module foresees participation in the activities of an organ transplant division.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Townsend C.M., <i>Sabinston Textbook of Surgery</i>, 19th Edition, Elsevier, 2012 - Lichtman & Pillai Abbas <i>Cellular and Molecular Immunology</i> 7th edition, Elsevier Saunders 2011 - Brunton L., Chabner B., Knollmann B., <i>Goodman & Gilman's The Pharmacological Basis of Therapeutics</i> 12th edition, McGraw Hill Medical, 2010 - De Toma G., Montorsi M., Bellantone R. <i>Chirurgia generale. Metodologia, patologia, clinica chirurgica</i>, Minerva Medica, 2009
5	Assessment methods and criteria	Oral exam
10) CLINICAL TRANSPLANTATION TRAINEESHIP (1 ECTS)		
Teacher: Antonio FAMULARI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 8-9) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Clinical Transplantation.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - assessment of patients with solid organ transplantation or end-stage single-organ and multiple-organ failure - pharmacological management of patients with solid organ transplantation or end-stage single-organ and multiple-organ failure - surgical management of patients with solid organ transplantation or end-stage single-organ and multiple-organ failure <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Make simple decisions regarding transplantation and its follow up o Learn the techniques of organ retrieval and transplantation o Acquire basic knowledge regarding management of solid organ transplant recipients or end-stage patients o Demonstrate skill in and ability to obtain informed consent to donation and transplantation
3	Prerequisites and learning activities	The student must know principles of surgery, immunology and pharmacology.
4	Teaching methods and language	<p>Tutorials, practical exercises</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Townsend C.M., <i>Sabinston Textbook of Surgery</i>, 19th Edition, Elsevier, 2012 - Lichtman & Pillai Abbas <i>Cellular and Molecular Immunology</i> 7th edition, Elsevier Saunders 2011 - Brunton L., Chabner B., Knollmann B., <i>Goodman & Gilman's The Pharmacological Basis of Therapeutics</i> 12th edition, McGraw Hill Medical, 2010 - De Toma G., Montorsi M., Bellantone R. <i>Chirurgia generale. Metodologia, patologia, clinica chirurgica</i>, Minerva Medica, 2009
5	Assessment methods and criteria	Oral exam
11) VASCULAR PATHOLOGY OF THE VENOUS SYSTEM (1 ECTS)		
12) AORTIC AND LOWER LIMBS VASCULAR PATHOLOGY (1 ECTS)		
13) ACUTE AND CHRONIC CEREBROVASCULAR INSUFFICIENCY (1 ECTS)		

Teacher: Carlo SPATERA, Marco VENTURA, Carla PETRASSI		
1	Course objectives	The Vascular Surgery course provides an overview of the principles of vascular surgery. The goal of this course is to provide the student with knowledge and understanding of the pathologies of all vascular districts (peripheral, cerebral, aortic, mesenteric, venous, etc.) in relation with anatomy, pathophysiology, clinical findings, and therapeutical aspects of cerebrovascular insufficiency, chronic lower limbs ischemia, aneurysmatic diseases, acute limbs ischemia, chronic and acute venous diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Anatomy and pathophysiology of the venous system of the limbs primitive varices of the lower limbs: pathophysiology, clinical, clinical diagnosis primitive varices of the lower limbs: Instrumental diagnosis and clinical classification varicose veins of the lower limbs: surgical therapy vein thrombosis of the deep circulation of the lower limbs: etiology and diagnosis deep vein thrombosis of the lower limbs: drug therapy pulmonary embolism: clinical and prevention</p> <p>Clinical Pathophysiology and therapy of arterial obstructive disease Pathophysiology and clinical therapy of aortic and peripheral aneurysms</p> <p>Symptomatology, pathology and clinical acute and chronic cerebrovascular insufficiency</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of vascular pathologies ○ have knowledge and understanding of clinical findings of vascular diseases ○ understand and explain clinical cases, symptoms and diagnostic methods ○ demonstrate skill in diagnosis and therapy and ability to the therapeutical management of vascular patient regarding medical, conventional or endovascular surgery ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know anatomy and physiology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: Spartera C. <i>Chirurgia delle arterie</i> . Masson Editore, 2005.
5	Assessment methods and criteria	Oral exam
14) VASCULAR PATHOLOGY OF THE VENOUS SYSTEM TRAINEESHIP (1 ECTS)		
Teacher: Carla PETRASSI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 11-13) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Vascular Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Presentation and discussion of clinical cases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of vascular pathology examination ○ Acquire basic knowledge on vascular surgical treatments
3	Prerequisites and learning activities	The student must know anatomy and physiology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: Spartera C. <i>Chirurgia delle arterie</i> . Masson Editore, 2005.
5	Assessment methods and criteria	Oral exam

Programme of “GINECOLOGIA ED OSTETRICIA, MEDICINA DELLA RIPRODUZIONE E DELLA SESSUALITÀ”

“GYNAECOLOGY AND OBSTETRICS, REPRODUCTIVE AND SEXUALITY MEDICINE”

This course is composed of eight Modules: 1) Prenatal Medicine, 2) Oncologic Gynaecology, 3) Gynaecology and obstetrics, 4) Pathophysiology of human reproduction, 5) Gynaecology and obstetrics traineeship, 6) Andrology, 7) Andrology traineeship, 8) Genetics traineeship.

D4040, Compulsory

Single Second Cycle Degree in MEDICINE 6 SURGERY, 6th year, 1st semester

Number of ECTS credits: 11 (total workload is 275 hours; 1 credit = 25 hours)

1) PRENATAL MEDICINE (1 ECTS)

2) ONCOLOGIC GYNAECOLOGY (1 ECTS)

3) GYNAECOLOGY AND OBSTETRICS (1 ECTS)

4) PATHOPHYSIOLOGY OF HUMAN REPRODUCTION (1 ECTS)

Teacher: Gaspare CARTA, Leonardo DI STEFANO, Giulio MASCARETTI, Patrizia PALERMO

1	Course objectives	The goal of this course is to achieve clinical competence in managing common and important clinical problems that women may present within the discipline of obstetrics and gynecology, and of reproduction.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Screening test and prenatal diagnosis, bleeding of the third trimester, premature rupture of membranes, clinical diagnosis of uterine myomas, endometriosis - Delivery, gestational diabetes, preterm delivery, shoulder dystocia, gestational hypertension, menopause, pelvic abnormalities, deep endometriosis, malignant tumors of the uterine cervix and body (carcinoma, sarcoma, etc.). Functional ovarian cysts, benign and malignant tumors of the ovary and the vulva. - Vulvovaginal cervical vaginitis, colposcopy, HPV infections, cervical cancer screening and PAP TEST - Structuring and maturation of the reproductive-sexual - Regulation of reproductive function - The Steroidogenesis placental and fetal-placental unit - Physiology and pathology of puerperium <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Understand the physiology of the female pelvic anatomy with an emphasis on reproductive development and changes in endocrinology across a woman's lifespan. o Understand maternal anatomic changes associated with the postpartum period and puerperium o Acquire a comprehensive understanding of primary and preventive care for women across the lifespan with appropriate screening tests, exams, and treatments at each stage o Describe pathologies of postpartum period and puerperium o Demonstrate the initial development of the clinical skills required for women's routine health maintenance including: taking an effective history and physical, developing a differential diagnosis, and developing a management plan for common disorders and conditions. o Discuss endoscopic diagnosis of benign and malignant reproductive pathologies o Outline the proper management of a patient with postmenopausal bleeding o Demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know female anatomy, physiology, and pathology.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Pescetto G., De Cecco L., Pecorari D., Ragni N. <i>Ginecologia ed ostetricia</i> (Volumes 1, 2), Società Editrice Universo, 2009 - Di Renzo G., <i>Trattato di Ginecologia e Ostetricia</i>, (Volumes 1, 2), Verduci Editore, 2009
5	Assessment methods and criteria	Oral exam

5) GYNAECOLOGY AND OBSTETRICS TRAINEESHIP (3 ECTS)

Teacher: Gaspare CARTA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 1-4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Gynaecology and Obstetrics.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Gynecological Oncology - Maternal-Fetal Medicine - Minimally Invasive Surgery - Reproductive Medicine, - Urogynecology <p>On successful completion of this module, the student should:</p> <ul style="list-style-type: none"> o Develop cognitive skills particularly in the area of clinical problem solving o Attain prescribed competency levels in specified procedures such as: normal deliveries, operative vaginal delivery, caesarean section, 3rd and 4th degree tears, basic and intermediate laparotomy, simple and advanced vaginal surgery, tensionless vaginal procedures, laparoscopic surgery, diagnostic and operative hysteroscopy, colposcopy, ultrasound. o Acquire basic knowledge in Gynaecologic Oncology surgery and gain a working knowledge of the pelvic sidewall, particularly in regard to the ureter and major blood vessels.
3	Prerequisites and learning activities	The student must know female anatomy, physiology and pathology.
4	Teaching methods and language	<p>Tutorials, practical exercises</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Pescetto G., De Cecco L., Pecorari D., Ragni N. <i>Ginecologia ed ostetricia</i> (Volumes 1, 2), Società Editrice Universo, 2009 - Di Renzo G., <i>Trattato di Ginecologia e Ostetricia</i>, (Volumes 1, 2), Verduci Editore, 2009
5	Assessment methods and criteria	Oral exam

6) ANDROLOGY (1 ECTS)

Teacher: Sandro FRANCAVILLA		
1	Course objectives	The goal of this course is to achieve clinical competence in managing common and important clinical problems that males may present within the discipline of andrology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Pathophysiology of puberty - Hypogonadism - Infertility - Sexuality medicine <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of etiology and pathogenesis of andrological diseases as well as of methods of diagnosis and treatment o have knowledge and understanding of known and proposed genetic defects involved in hypogonadism o understand and explain different presentations of reproductive and sexological diseases o demonstrate skill in diagnosis and pharmacological treatment and ability to recognize symptoms of different diseases o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know male anatomy, physiology, and pathology.
4	Teaching methods and language	<p>Lectures.</p> <p>Language: Italian</p> <p>Ref. Text Books:</p>

		- Lenzi A. <i>Guida allo studio dell'andrologia</i> . Società Editrice Universo, 2012
5	Assessment methods and criteria	Oral exam
7) ANDROLOGY TRAINEESHIP (1 ECTS)		
Teacher: Sandro FRANCAVILLA		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 6) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Andrology.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Interpretation of semen analysis - Scrotal echography <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of semen analysis and scrotal echography o Acquire basic knowledge on interpretation of semen analysis o Acquire basic knowledge on interpretation of scrotal echography
3	Prerequisites and learning activities	The student must know male anatomy, physiology and pathology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Lenzi A. <i>Guida allo studio dell'andrologia</i> . Società Editrice Universo, 2012
5	Assessment methods and criteria	Oral exam
8) GENETICS TRAINEESHIP (1 ECTS)		
Teacher: Elvira D'ALESSANDRO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 1-4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Clinical Genetics.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <p>Presentation and discussion of clinical cases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Acquire basic knowledge of clinical comprehensive genetic examination
3	Prerequisites and learning activities	The student must know male anatomy, physiology and pathology.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Russell P.J.: <i>Genetica: un approccio molecolare</i> , Pearson Italia, Terza edizione, 2010 - Strachan T., Read A.: <i>Genetica Molecolare Umana</i> , Zanichelli, 2012
5	Assessment methods and criteria	Oral exam

Programme of "DERMATOLOGIA E REUMATOLOGIA" "DERMATOLOGY AND RHEUMATOLOGY"
This course is composed of two Modules: 1) Rheumatology, 2) Dermatology.
D4067, Compulsory Single Second Cycle Degree in MEDICINE 6 SURGERY, 6th year, 2nd semester
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)
1) RHEUMATOLOGY (3 ECTS)
Teacher: Roberto GIACOMELLI (Coordinator)

1	Course objectives	The goal of this course is to enable the student to feel comfortable in evaluating patients with rheumatic diseases. The student should know the important elements of the history in such patients and be able to interpret abnormal physical findings. By the end of the course, the student should be aware of the basic principles of treating patients with rheumatic diseases.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ol style="list-style-type: none"> 1. Rheumatic diseases: basic concepts 2. Materials and joints: structure and function. 3. Epidemiology 4. Pathogenic mechanisms of immune-mediated rheumatic diseases 5. Symptoms, signs and measures 6. The analysis of synovial fluid 7. Imaging in rheumatology 8. The laboratory of rheumatic diseases 9. Arthritis by infectious agents 10. Arthritis post-infectious 11. Ankylosing spondylitis 12. Enteropathic arthropathies 13. Rheumatoid Arthritis 14. Juvenile Idiopathic Arthritis 15. Connectivitis 16. Antiphospholipid syndrome 17. Systemic Sclerosis 18. Dermatopolimiositis 19. Sjogren's Syndrome 20. Vasculitis 21. Microcrystals arthropathies 22. Osteoarthritis 23. Extra-articular Rheumatism 24. Main bone disease 25. Complex regional pain syndrome 26. Hereditary diseases of the connective tissue <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of the comprehensive musculoskeletal system o have knowledge and understanding of the use of corticosteroids, nonsteroidal anti-inflammatory agents and immunosuppressive agents in rheumatic diseases o develop a reasonable differential diagnosis for both monarticular and polyarticular presentations of arthritis o be familiar with and proficient in the use of an expanded history of present illness and review of systems pertinent to musculoskeletal and rheumatic disorders o be familiar with and be able to instruct patients in the use of the main modalities of physical therapy and joint protection o recognize the importance of and demonstrate a commitment to the utilization of other health care professionals in diagnostic decision making o demonstrate capacity to continue learning by understand other texts on related topics.
3	Prerequisites and learning activities	The student must have basic knowledge of anatomy and biology.
4	Teaching methods and language	Lectures with slides, Exercises, Report, Group work Language: Italian, English Ref. Text Books: - UNIREUMA. <i>Reumatologia. Per studenti e medici di medicina generale</i> , Idelson Gnocchi, 2014
5	Assessment methods and criteria	Written and Oral exam
2) DERMATOLOGY (1 ECTS)		
Teacher: Maria Concetta FARGNOLI		
1	Course objectives	The goal of this course is - to give students a good knowledge on basic dermatology and the ability to address the final diagnosis in the context of a number of possible differential diagnoses; - to recognize the most common cutaneous diseases, either infective or inflammatory,

		observed in clinical practice (giving emphasis to the overall clinical findings); - to provide details in the field of dermato-oncology; - to evaluate the most appropriate treatment plan and consider current medications.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Anatomy and physiology of the skin, structure and function of the skin, - Basic morphology of cutaneous lesions - How to perform a dermatologic clinical examination and thorough anamnesis - Viral, bacterial and mycotic infections and infestations - Eczematous eruptions (allergic contact dermatitis, irritant contact dermatitis, atopic dermatitis) and urticaria; - Acne and acneiform eruptions; - Psoriasis; - Alopecia; - Vitiligo; - Lichen planus and lichenoid reactions; - Lupus erythematosus; dermatomyositis, scleroderma; pemphigus and pemphigoid group; - Sexually transmitted infections; - Precancerous lesions and cutaneous neoplasia of epithelial origin; - Benign and malignant melanocytic lesions; - Cutaneous lymphomas and pseudolymphomas; Kaposi sarcoma; - Disorders due to physical and chemical agents; - New evidences on the pathogenesis, diagnosis and recent treatments of cutaneous diseases will also be discussed. <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of the etiology, clinical morphology, diagnosis and treatment of the most common dermatological diseases o have knowledge and understanding of all possible differential diagnoses, planning the right laboratory examinations and instrumental investigations in order to address the clinical diagnosis and perform the appropriate treatment when dealing with cutaneous manifestations o understand and explain clearly to experts and non experts their conclusions and the way they reached them o demonstrate skill in integrating knowledge in dermatology and internal medicine and ability to manage difficult situations o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know the basic principles of internal medicine and pharmacology.
4	Teaching methods and language	Lectures, team work on clinical cases and diagnostic techniques Language: Italian Ref. Text Books: - Cainelli T., Giannetti A., Rebora A. <i>Manuale di Dermatologia Medica e Chirurgica</i> . McGraw-Hill, 2012 - Amerio P.L., Bernengo M.G., Calvieri S., Chimenti S., Pippione M., Aricò M., Aste N., Borroni G., Leigh G., Micali G., Nunzi E., Offidani A.M., Tulli A. <i>Dermatologia e Venereologia</i> . Minerva Medica, 2009
5	Assessment methods and criteria	Written exam

**Programme of “EMERGENZE MEDICO-CHIRURGICHE”
“MEDICAL AND SURGICAL EMERGENCIES”**

This course is composed of nine Modules: 1) Anesthesiology, 2) Resuscitation and intensive care, 3) Emergencies in anesthesia and intensive care, 4) Pain therapy in emergency, 5) Emergency Medicine, 6) Emergency Medicine traineeship, 7) Cardiovascular Emergencies traineeship, 8) Surgical Emergencies, 9) Surgical Emergencies traineeship.

D1884, Compulsory

Single Second Cycle Degree in MEDICINE 6 SURGERY, 6th year, 2nd semester

Number of ECTS credits: 12 (total workload is 300 hours; 1 credit = 25 hours)

1) ANESTHESIOLOGY (1 ECTS)
2) RESUSCITATION AND INTENSIVE CARE (2 ECTS)
3) EMERGENCIES IN ANESTHESIA AND INTENSIVE CARE (1 ECTS)
4) PAIN THERAPY IN EMERGENCY (1 ECTS)

Teacher: Franco MARINANGELI, Alba PIROLI, Alessandra CICOZZI		
1	Course objectives	The goal of this course is to achieve clinical competence in managing common and important clinical problems in anesthesiology, resuscitation and intensive care, emergencies in anesthesia and intensive care, and in pain therapy.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Local anesthetics: <ul style="list-style-type: none"> ✓ Mechanisms of action, Clinical Use, Side effects ✓ Centroneuroassiali blocks: <ul style="list-style-type: none"> ✓ Block subarachnoid: indications, technique of execution, side effects ✓ Epidural block: indications, technique of execution, side effects ✓ General anesthetics: <ul style="list-style-type: none"> ✓ Mechanisms of action, Clinical Use, Side effects- curare ✓ Opioids ✓ NSAIDs ✓ Principles of general anesthesia: stages of anesthesia ✓ Endotracheal intubation ✓ Monitoring of vital signs - Respiratory failure: Classification, Pathophysiology, Treatment - Cardiovascular pathophysiology, invasive hemodynamic monitoring - Airway management: endotracheal intubation, tracheotomy percutanea - Oxygen therapy - Artificial ventilation: invasive and noninvasive - Acid-base balance disorders: pathophysiology, classification, therapy - Disorders of the acid – base balance, Blood Gas Analysis - Pathophysiology and correction of electrolyte disturbances - Fluid therapy - Head injury: pathophysiology of cerebral circulation, intracranial pressure, neurological evaluation (GCS), therapy - Disorders of consciousness: coma, vegetative state - Protein calorie malnutrition: pathophysiology - Artificial nutrition: enteral, parenteral - Cardiovascular drugs - First Aid, Basic Life Support, Basics of emergency medicine, Acid / Base Fluid Balance, Cardiocirculatory Pathophysiology, Emergency Drugs, Emergency Organization in the NHS, Medical Emergencies, Transport and stabilization of the polytrauma. - Neurological Emergencies - Pathophysiology of pain, General Anesthesia, Neuraxial blocks, Local Anesthetics, Opioids and their rational use, Post-Operative Acute Pain <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of Anesthesia, Resuscitation, Intensive Care principles o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know physiology, and pathology.
4	Teaching methods and language	<p>Lectures, team work and clinical practice</p> <p>Language: Italian</p> <p>Ref. Text Books:</p> <ul style="list-style-type: none"> - Balzanelli M.G., <i>Manuale di Medicina d'urgenza e pronto soccorso</i>, CIC Edizioni Internazionali, 2010 - Burton J.H., Miner J. <i>Sedazione e terapia del dolore in emergenza</i>. Verduci, 2014 - Larsen R. <i>Anestesia illustrata</i>, Delfino Editore, 2012
5	Assessment methods and criteria	Oral exam

5) EMERGENCY MEDICINE (2 ECTS)		
Teacher: Claudio FERRI		
1	Course objectives	The goal of this course is to achieve clinical competence in emergency medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Emergency medicine.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of medical emergencies principles ○ have knowledge and understanding of main medical emergencies ○ understand and explain medical emergencies observed in practical activities ○ demonstrate skill in diagnosis of medical emergencies and ability to address their treatment ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know internal medicine.
4	Teaching methods and language	<p>Lectures.</p> <p>Language: Italian</p> <p>Ref. Text Books: Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012.</p>
5	Assessment methods and criteria	Oral exam
6) EMERGENCY MEDICINE TRAINEESHIP (1 ECTS)		
Teacher: Claudio FERRI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 5) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Emergency Medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: - Presentation and discussion of clinical cases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of clinical diagnosis of medical emergencies ○ Acquire basic knowledge of the principles of treatment of medical emergencies.
3	Prerequisites and learning activities	The student must know internal medicine.
4	Teaching methods and language	<p>Tutorials, practical exercises</p> <p>Language: Italian</p> <p>Ref. Text Books: - Harrison, <i>Principi di medicina Interna</i>, McGraw Hill Libri Italia, 2012.</p>
5	Assessment methods and criteria	Oral exam
7) CARDIOVASCULAR EMERGENCIES TRAINEESHIP (1 ECTS)		
Teacher: Maria PENCO		
1	Course objectives	This Module is the practical application of the theoretical concepts of Module 4) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Cardiovascular Emergencies.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include:</p> <ul style="list-style-type: none"> - Applications of the basic principles and methods of Clinical Cardiology to the practice of Cardiovascular Emergencies (Acute Coronary Syndromes, Aortic Dissection, Pulmonary Embolism, Sudden Death etc) - Knowledge of the principles of clinical-diagnostic and therapeutic modalities - Discussion of paradigmatic Clinical cases of cardiovascular emergencies <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of clinical diagnosis of cardiovascular emergencies ○ Acquire basic knowledge of the principles of treatment of cardiovascular emergencies

3	Prerequisites and learning activities	The student must know the basic notions of pathophysiology of myocardial infarction and its complications, of acute aortic dissection, of acute pulmonary embolism, of coronary sudden death.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Harrison, <i>Principi di medicina Interna</i> , McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Multiple choice tests evaluation on clinical cases. Evaluation of knowledge of practice of cardiac resuscitation

8) SURGICAL EMERGENCIES (1 ECTS)

Teacher: Stefano GUADAGNI		
1	Course objectives	The goal of this course is to achieve clinical competence in surgical emergencies.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Appendicitis, bowel obstruction, pneumothorax, tracheotomy, central venous access, hemoperitoneum.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of surgical emergencies principles o have knowledge and understanding of main surgical emergencies o understand and explain surgical emergencies observed in practical activities o demonstrate skill in diagnosis of surgical emergencies and ability to address their treatment o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know general surgery.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: - Townsend C.M., <i>SabinstonTextbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam

9) SURGICAL EMERGENCIES TRAINEESHIP (3 ECTS)

Teacher: Stefano GUADAGNI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 8) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Surgical Emergencies.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Presentation and discussion of clinical cases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of clinical diagnosis of surgical emergencies o Acquire basic knowledge of the principles of treatment of surgical emergencies
3	Prerequisites and learning activities	The student must know general surgery.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: Townsend C.M., <i>SabinstonTextbook of Surgery</i> , 19 th Edition, Elsevier, 2012
5	Assessment methods and criteria	Oral exam

**Programme of “MEDICINA INTERNA E GERIATRIA”
“INTERNAL MEDICINE AND GERIATRICS”**

This course is composed of seven Modules: 1) Geriatrics, 2) Geriatrics traineeship, 3) Diagnostic approach and principles of therapy, 4) Identification of diagnostic and therapeutical priorities, 5) Patient’s education to the therapy home management, 6) Diagnostic approach and principles of therapy, traineeship, 7) Family Medicine traineeship.

D2152, Compulsory

Single Second Cycle Degree in MEDICINE 6 SURGERY, 6th year, 2nd semester

Number of ECTS credits: 11 (total workload is 300 hours; 1 credit = 25 hours)

1) GERIATRICS (3 ECTS)

Teacher: Giovambattista DESIDERI

1	Course objectives	The goal of this course is to achieve clinical competence in managing common and important clinical problems within the discipline of geriatrics..
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Multidimensional geriatric assessment; geriatric syndromes (dementia, cardio-cerebrovascular diseases, malnutrition, respiratory diseases, musculoskeletal diseases, renal failure).</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o have profound knowledge of basic symptoms and signs in geriatric medicine o have knowledge and understanding of physical examination in the main geriatric syndromes o understand and explain clinical signs and symptoms and interpretation of the main indices of laboratory related to several large groups of geriatric diseases o demonstrate skill in selecting laboratory testing and instrumental investigations for the correct diagnosis and identification of the specific disease and ability to methodological process to arrive at the correct diagnosis o demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know basic physiology and pathophysiological notions on the main geriatric syndromes.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: Senin U., Cherubini A., Mecocci P. <i>Paziente Anziano - Paziente Geriatrico Medicina della Complessità. Fondamenti di Gerontologia e Geriatria</i> , EdiSES, 2010
5	Assessment methods and criteria	Oral exam

2) GERIATRICS TRAINEESHIP (1 ECTS)

Teacher: Giovambattista DESIDERI

1	Course objectives	This Module is the practical application of the theoretical concepts of Module 1) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Geriatric Medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Students will be taught how to perform physical examination of the head and neck, cardiovascular, respiratory and gastro enteric systems as well as the kidney, urinary tract and skin apparatus with regard to the specific features of signs and symptoms that occur with aging</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> o Learn the techniques of physical examination o Acquire basic knowledge of symptoms and signs in the main geriatric syndromes o Acquire basic knowledge in selecting laboratory testing and instrumental investigations for the correct diagnosis and identification of the specific disease
3	Prerequisites and learning activities	The student must know basic physiology and pathophysiological notions on the main geriatric syndromes.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books:

		Senin U., Cherubini A., Mecocci P. <i>Paziente Anziano - Paziente Geriatrico Medicina della Complessità. Fondamenti di Gerontologia e Geriatria</i> , EdiSES, 2010
5	Assessment methods and criteria	Oral exam
3) DIAGNOSTIC APPROACH AND PRINCIPLES OF THERAPY (2 ECTS) 4) IDENTIFICATION OF DIAGNOSTIC AND THERAPEUTICAL PRIORITIES (1 ECTS) 5) PATIENT'S EDUCATION TO THE THERAPY HOME MANAGEMENT (1 ECTS)		
Teacher: Claudio FERRI, Ivano TESTA, Giuliana Properzi		
1	Course objectives	The goal of this course is to achieve clinical competence
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Pathophysiology, physical symptomatology, laboratory and instrumental, prevention and medical treatment of respiratory diseases. Identification of priorities for medical treatment and strategies in order to improve adherence to treatment.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ have profound knowledge of principles of medical therapy. ○ have knowledge and understanding of treatments in internal medicine diseases ○ understand and explain clinical signs and symptoms and interpretation of the main indices of laboratory related to medical diseases ○ demonstrate skill in diagnosis of internal medicine diseases and ability to prescribe medical treatments ○ demonstrate capacity to continue learning by understand other texts on related topics
3	Prerequisites and learning activities	The student must know systematic pathology.
4	Teaching methods and language	Lectures. Language: Italian Ref. Text Books: - Harrison, <i>Principi di medicina Interna</i> , McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam
6) DIAGNOSTIC APPROACH AND PRINCIPLES OF THERAPY TRAINEESHIP (3 ECTS) 7) FAMILY MEDICINE TRAINEESHIP (2 ECTS)		
Teacher: Claudio FERRI		
1	Course objectives	This Module is the practical application of the theoretical concepts of Modules 3-5) of which constitutes an integral part. It provides the students with the practical skills and abilities needed in their professional life. They will be able to apply the basic principles and methods of Internal Medicine and Family Medicine.
2	Course content and Learning outcomes (Dublin descriptors)	<p>Topics of the module include: Presentation and discussion of clinical cases.</p> <p>On successful completion of this module, the student should</p> <ul style="list-style-type: none"> ○ Learn the techniques of selecting laboratory testing and instrumental investigations for the correct diagnosis and identification of the specific disease ○ Learn the techniques of identification of the correct specific treatment for a specific disease
3	Prerequisites and learning activities	The student must know internal medicine.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: - Harrison, <i>Principi di medicina Interna</i> , McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam