UNIVERSITY OF L'AQUILA

Department of Health, Life and Environmental Sciences

1st Cycle Degree in PHYSIOTHERAPY

Laurea in FISIOTERAPIA

Course Catalogue

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 First Cycle Degree in PHYSIOTHERAPY				
YEAR	**CODE**	**COURSE**	**Credits (ECTS)**	**Semester**
I	D0562	Human Anatomy	3	1
	D1340	Physiology	6	1
	D4103	Basic Introductory Sciences	14	1
	D1812	Biomedical Sciences	6	2
	D0298	Kinesiology	6	2
	D3638	*Work Placement I*	20	1 and 2
II	D0315	Rehabilitation Methodologies	6	1
	D0447	Neurological Sciences	6	1
	D4104	Diseases of the locomotor apparatus and Special Kinesitherapy	6	1
	D4105	Medical Sciences and Psychiatrics	7	2
	D0448	Child Neuropsychiatry and Rehabilitation Methods on Childhood	6	2
	D3640	*Work Placement II*	20	1 and 2
III	D4107	First Aid and Applied Medical Technical Sciences	6	1
	D4058	Cardiovascular Diseases and Cardiorespiratory Rehabilitation	6	1
	D0341	Physical Medicine and Rehabilitation	6	1
	D4106	Hygiene and Health Management Sciences	9	2
	D0488	Pharmacology	3	2
	D3642	*Work Placement III*	20	1 and 2
	D4108	*Free choice courses*	6	1 and/or 2
	D4079	*Other Courses / Activities:* o *Other activities* o *English* o *Specific professional Labs*	12	1,2
	D2054	*Thesis*	6	2

Programme of "ANATOMIA UMANA" *"HUMAN ANATOMY"*		
D0562, compulsory **1st Cycle Degree in PHYSIOTHERAPY, 1st year; 1st semester**		
Number of ECTS credits: 3 (total workload is 75 hours; 1 credit = 25 hours)		
Teacher: Roberta SFERRA		
1	Course objectives	The course aim is to provide knowledge of the general and structural organization of various human organ systems and theoretical concepts regarding the main morpho-functional relationships.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Overview of the human body and anatomic nomenclature. - Musculoskeletal system: Head (external skull, intracranial regions),Vertebral column, Chest, Pelvic girdle, Upper and lower limb. - Cardiovascular system: mediastinum, heart and great vessels. Overview of lymphatic system. - Respiratory system: Upper airways, trachea and bronchi. Lungs and Pleura. - Overview of Digestive system. - Urogenital system: Kidney and urinary tree. General aspects of female and male reproductive systems. - Endocrine system. - Nervous system: spinal cord and spinal nerves. Brain stern. Cerebellum. Diencephalon. Cerebral hemisphere. Cranial nerves. - Special senses: external, middle and inner ear. The eye. The orbit and accessory visus apparatus. On successful completion of this module, the student should o have profound knowledge of gross and functional anatomy of the musculoskeletal system and nervous system; o have knowledge and understanding of different human body systems; o demonstrate the ability to recognize the anatomical peculiarities of musculoskeletal system (i.e. external skull, intracranial regions, vertebral column, chest, pelvic girdle, upper and lower limb) on human anatomy models; o demonstrate capacity for reading and understanding other texts on related topics.
3	Prerequisites and learning activities	The student must know the basic structure and function of cells and integrating cells into tissues.
4	Teaching methods and language	Lectures, team work, home work. Language: Italian Ref. Text books: - Anatomia dell'uomo. AA.VV, Edi-Ermes, 2006. - Anatomia Umana e Istologia. Carinci, Gaudio, Marinozzi. Elsevier, 2008. - Anatomia Umana. Atlante. Volume 1. Anastasi, Tacchetti et al. Edi Ermes, 2006.
5	Assessment methods and criteria	Oral examination

Programme of "FISIOLOGIA" *"PHYSIOLOGY"* **This course is composed by two Modules: 1) Physiology, 2) General Psychology**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
D1340, Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 1st year of study, 1st semester**		
1) PHYSIOLOGY		
Teacher: Tiziana M. FLORIO		
1	Course objectives	The goal of this course is to provide the student with the fundamentals on the human body functions. On successful completion of this module, the student should understand the functioning of the major physiological organ systems: cardiovascular, respiratory, renal, neural and gastrointestinal; as well as basic concepts of general physiology

2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Introduction and General Physiology: Levels of organization of tissue, organs and organ systems of the body. Function and regulation of the human body fluids, composition of body fluids, membrane trasports. Omeostasis and physiological integration of the organ systems to maintain homeostasis Cellular Neurophysiology: The fundamental mechanisms of action potential propagation, synaptic transmission, and receptor potential generation Nervous System, Sensory Physiology and Efferent Nervous System: The Nervous System organization. The general properties of sensory systems. The somatic senses. The macro and microscopic structure of muscle. The events involved with muscle contraction and relaxation in response to an action potential. The three levels of nervous control of the body movement: the spinal cord, the brain stem, the cerebral cortex level. Cardiovascular Physiology: The cardiac performance, and the cellular, ultrastructural and molecular bases of normal cardiac function and myocardial blood flow. Different regional circulations. Neuronal, humoral and local mechanisms of regulation of organ blood flow. Mechanisms of regulation of vascular smooth muscle contractility. Influence of the endothelium on vascular tone and reactivity on local blood flow regulation. Renal Physiology: Control of the volume and composition of body fluids attributed to kidney functions. Control of glomerular filtration; nephron function; transport of fluid, electrolytes and organic molecules; endocrine regulation of the kidney. Respiratory Physiology: Functioning of the pulmonary system in physiological conditions through the understanding of the gas laws within the body. The process of ventilation and gas exchange in the lungs. Volumes and pulmonary capacities. Gases transportation. Ventilation and its control On successful completion of this module, the student should o have knowledge of the essential concepts of physiology and mechanisms of body function at various levels of organization, ranging from cellular and molecular to tissue and organ system levels. o have knowledge of the process of control and coordination in the performance of normal motor control o understand the integrated regulation of various body processes among the body organ, o demonstrate skill in analyzing the effects of environmental variability of the organ systems of the human body, o demonstrate capacity to apply the compiled information to clinical or research situations.
3	Prerequisites and learning activities	The student must have the basic physical notions as acquired in the secondary Schools
4	Teaching methods and language	Lectures. Language: Italian Ref. Text books - Roades – Planzer "*Fisiologia Generale e umana*", Piccin, 2004. - Klinke - Pape - Kurtz - Silbernagl "*Fisiologia*", Edises, 2012. - Stanfield, Germann "*Fisiologia*", Edises, 2011.
5	Assessment methods and criteria	Written exam.
2) GENERAL PSYCHOLOGY		
Teacher: Domenico PASSAFIUME		
1	Course objectives	The goal of the course is to provide the basic knowledge of brain functions and main techniques in Psychology for better identify and address the patients that need occupational therapy. 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)	Topics of the module include: Psychology and science: Methods: observation, experiment, single case examination. Instruments: check list, inventory, test. Theory and School: Psycho-physiological 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. On successful completion of this module, the student should o have good knowledge of basic techniques in Psychology o have knowledge and understanding of the consequence of organic or functional brain disease o understand and explain the meaning of complex behavior o understand the fundamental concepts of brain – behavior relations o demonstrate skill in behavior observation, ability to conceive a response to inappropriate behaviour. o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	No specific prerequisites are needed
4	Teaching methods and language	Lectures and exercises. Language: Italian Suggested Text books: P. Gray, *Psicologia*, Zanichelli, Bologna 2012 (or any manual of Psychology)
5	Assessment methods and criteria	Written exam.

Programme of "SCIENZE PROPEDEUTICHE" ***"BASIC INTRODUCTORY SCIENCES"*** **This Course is composed of 4 Modules: 1) Statistics, 2) Informatics, 3) Applied Physics, 4) Radioprotection Techniques**		
Number of ECTS credits: 14 (total workload is 350 hours; 1 credit = 25 hours)		
D4103, compulsory **1st Cycle Degree in PHYSIOTHERAPY**, 1st year, 1st semester		
1) STATISTICS		
Teacher: Cinzia LEUTER		
1	Course objectives	Aim of this course is providing the students with basic notions enabling them to understand biostatistics methods and to apply them to health care and to health services organization and delivery.
2	Course content and Learning outcomes (Dublin descriptors)	Course content: Descriptive statistics. Data types. Frequency distribution. Numerical and graphical methods for organizing and summarizing data. Means and variance. Probability. Probability distribution. Inferential Statistics. Confidence intervals. Linear regression and correlation. The learning outcome include: -ability to assess and evaluate problems in data collection and management; -capacity to apply statistical methods to studies in public health; -ability to interpret research data and to provide correct information on the study results; At the end of the module the students will be able to: o Understand the basic of probability theory and the most commonly used continuous probability distributions; o Understand problems and then appropriately use data analysis o Know when and how to apply basic biostatistical methods o Use descriptive statistics to analyze categorical and continuous data o Construct confidence intervals for population means and variance o Interpret results of data analysis and statistical tables in a variety of contexts o Participate in drawing conclusion from data and in the presentation and writing of report
3	Prerequisites and learning activities	Basic mathematics from schools
4	Teaching methods and language	Lectures, team work, exercises Language: Italian Ref. Text books:

		Teacher's lecture notes and slides.
5	Assessment methods and criteria	Written exam will be taken to evaluate the effectiveness of students learning
2) INFORMATICS		
Teacher: Giuseppe PLACIDI		
1	Course objectives	The Modules intends to provide the students with information about medical informatics and awareness of the needs and proper use of computers in healthcare. The students will know the principal applications of informatics in healthcare and will be able to apply informatics in medical care issues.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Introduction to Medical informatics; -Definition, properties and flow chart of an algorithm; -Information coding; -Medical images: reconstruction, coding, representation and processing; -The architecture of a Personal Computer, Hardware and software, Models and systems, The operating system, Computer networks and Internet; -Database: definition and usage, ICT based healthcare applications, Electronic Health Record -Telemedicine applications, Real-time systems in medicine, Haptic interfaces, Artificial intelligence in medicine; -Principles of information and network security. On successful completion of this module, the student should 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	Basic knowledge from Schools
4	Teaching methods and language	Lectures, exercises, home work, reports Language: Italian Ref. Text books Teacher's lecture notes and slides. Some specific journal papers are also given to explore some topics in more details.
5	Assessment methods and criteria	Written test: the student has to give brief answers, in 45 minutes, to four open questions.
3) APPLIED PHYSICS		
Teacher: Silvia COLACICCHI		
1	Course objectives	Applied Physics is a link between the fundamental laws of nature and their applications. This course is mainly aimed to describe and explain basic phenomena from biological and medical world. The student will acquire knowledge and understanding of physics principles involved.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Standards: SI System , Measurements and Significant Figures. Vectors - Force and acceleration. Newton's Laws. Energy and momentum. - Equilibrium, the lever and mechanical advantage. - Temperature and Heat . Heat/energy balance in human body. - Wave Characteristics - Intensity, Sources and Propagation of Sound. Human eye operation. Main sight defects and the correction. - Intensity, Sources and Propagation of Light. Human ear operation. Ear sensitivity and decibels. - Fluid mechanics: liquids and gases. Density and pressure. Flow's laws. Viscosity. Blood characters and flow phenomena in the circulation. On successful completion of this module, the student will o acquire knowledge and understanding of basic concepts Physics, o be able to apply the acquired knowledge to biological phenomena, o demonstrate skill in scientific reasoning, o demonstrate **capacity** for reading and understand other texts on related

		topics.
3	Prerequisites and learning activities	The student must have the basic mathematical notions and methods as acquired in the secondary Schools
4	Teaching methods and language	Lectures and exercises. Language: Italian Ref. Text Books: Teacher's Notes and any basic Physics Text books used at secondary schools
5	Assessment methods and criteria	Written exam, by multiple choice testing

4) RADIATION PROTECTION	
Teacher: Carlo MASCIOCCHI	
Course objectives	Aims of the module are to provide medical information about the use of ionizing and non-ionizing radiation and methods to protect from them, according to the actual Italian law. Students will acquire knowledge and understanding of the main problems connected with protection in working places and capacity to cope with them.
Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - principles of physics of ionizing radiations, - biological effects due to interaction with living matter, radiation effects - exposure of population to ionizing radiation, - sources of ionizing radiation in radiological practice and principles of image production measures of ionizing radiation, - principle of radiation protection, - Italian Directives on radiation protection of workers and population, - health protection of individuals against the dangers of ionizing radiation in relation to medical exposure - general principles of protection in relation to practices with employment of radiological Equipment On successful completion of this module, the student should: o have knowledge and understanding of ionizing and non-ionizing radiation, o understand and explain the rules of radiation protection, o be able to apply the principles of protection to concrete cases, and make informed choices, o be able to read and understand texts on the field and up-date his knowledge
Prerequisites and learning activities	No previous learning is needed
Teaching methods and language	Lectures Language: Italian Text books E. Di Cesare, P. Gallicchi, M. Midiri, *La Radioprotezione in Radiologia*, Casa Editrice Idelson-Gnocchi, 2010.
Assessment methods and criteria	Written exam

Programme of "SCIENZE BIOMEDICHE" ***"BIOMEDICAL SCIENCES"*** **This Course is composed of 2 Modules: 1) Biochemistry, 2) General Pathology**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
D1812, compulsory **1st Cycle Degree in PHYSIOTHERAPY, 1st year, 2nd semester**		
1) BIOCHEMISTRY		
Teacher: Fabrizia BRISDELLI		
1	Course objectives	The objective of course is to introduce students to the basic concepts of biochemistry, providing a survey of the structure, function and reaction of major biological molecules. The course is designed to give the foundation for further study of physiology and pathology.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: OVERVIEW ON BIOCHEMISTRY: Chemical composition of living organisms. Chemical bonds. Principal functional groups of organic molecules. WATER: Chemical-physical properties. Hydrogen bonds. Solvent properties of water.

		Ionization of water Acids and bases. Buffer solutions. Macromolecules and their monomeric subunits. AMINO ACIDS AND PROTEINS: Chemical and biological properties and structure of aminoacids. Peptide bond. Primary, secondary, tertiary and quaternary of proteins. Major secondary structures: α-helix and β-plated sheet. Collagen, keratin, elastin, myosin and actin. MYOGLOBIN AND EMOGLOBIN: Structure and functional properties. Mutated and pathological emoglobins. ENZYMES: Structures and functions. Enzyme kinetic. Enzyme inhibition. Control of enzyme activity. CARBOHYDRATES: Structure and properties of monosaccharides, disaccharides, storage and structural polysaccharides. Glycoconjugates LIPIDS: fatty acids, triacylglicerols, phosphoacylglycerols, sphingolipids, steroids. Biological membranes. Membrane proteins and transport. NUCLEOTIDES: Structures of nucleosides and nucleotides. Purine and pyrimidine bases. Phosphodiester bond. Nucleic acids. Cyclic nucleotides. ATP. NAD and NADP. FAD. BIOLOGICALLY IMPORTANT OXIDATION-REDUCTION REACTIONS. CARBOHYDRATE METABOLISM: Carbohydrate digestion. Glycolysis. Lactic and alcoholic fermentation. Glycogen synthesis and breakdown. Pentose phosphate pathway. Gluconeogenesis. THE TRICARBOXYLIC ACID CYCLE. ELECTRON TRANSPORT CHAIN AND OXIDATIVE PHOSPHORYLATION. LIPID METABOLISM: Lipid digestion and transport. B-oxidation of fatty acids. Acetyl-CoA fate. Ketone bodies. PROTEIN METABOLISM: Amino acid catabolism. Transamination reactions. Ammonia production. Urea cycle. Fate of the carbon skeleton of amino acids. LIPOSOLUBLE VITAMINS: Vitamin A, D, E, K. HYDROSOLUBLE VITAMINS On successful completion of this module, the student is expected to o become familiar with the structure and function of carbohydrates, lipids, proteins and nucleic acids, and understand the cell metabolism and its regulation, o be able to explain the structure, function and reaction of major biological molecules; o demonstrate skills in applying knowledge properly with scientific reasoning ; o acquire the ability for reading and understanding other texts on related topics and assess to what extent these are applicable to his field of interest.
3	Prerequisites and learning activities	The student must know general biology and chemistry
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: M.V. Catani, I. Savini, P. Guerrieri, L. Avigliano. *Appunti di Biochimica* (per le Lauree Triennali). Piccin (2008) David L. Nelson, Michael M. Cox. *Introduzione alla Biochimica di Lehninger*. Quarta edizione (2011), Zanichelli. John W. Pelley. *Biochimica* (2008), Elsevier Masson.
5	Assessment methods and criteria	Written exam
2) GENERAL PATHOLOGY		
Teachers: Andrew Reay MACKAY		
1	Course objectives	The objective of this course is to offer students an updated understanding of General Pathology. On successful completion of this module, the student should not only have a good understanding of general pathology but also a good understanding of host defence mechanisms against pathogens, the importance of the intestinal symbiotic microbiota, the inflammatory process, wound healing, chronic inflammation, and a basic understanding of the biology of cancer.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: General introduction into the role of general pathology in the history of medicine. Evolution of the concept of inflammation. Stem cells, cellular mechanisms of stress-resistance, apoptosis, cellular adaptation, cellular and tissue regeneration. Pathogens. Host defence mechanisms of the skin and epithelia, Toll-like and NOD-like receptors. The Inflammasome and its role in

		maintaining the intestinal symbiotic microbiota. The role of the intestinal symbiotic microbiota in maintaining health and optimising immune system function. Definition and cardinal signs of acute inflammation. Cellular and non-cellular components of acute inflammation (leukocyte populations, platelets, vascular structure and function, the lymphatic system, the extracellular matrix and basement membrane, stromal and epithelial cells, and components of the nervous system). Mediators and modulators of acute inflammation, including vasoactive amines, the kinin system, the complement system, coagulation, prostaglandins, leukotrienes, lipoxins, citokines, chemokines and neuropeptides. Wound healing and scar formation. The systemic "Acute Phase" response. Chronic inflammation and the formation of abscesses, granulomas and ulcers. The inflammatory basis of chronic diseases, such as Rheumatoid arthritis, Systemic lupus erythematosus and obstructive pulmonary diseases. Modern concepts of anti-inflammatory therapy. General introduction of the biology of cancer, cancer nomenclature, oncogenes and onco-suppressors, the metastatic cascade and angiogenesis. On successful completion of this module the Fisiotherapy student should: o have an updated knowledge of general pathology o have knowledge and understanding of host defence mechanisms against pathogens - the importance of the intestinal symbiotic microbiota, the inflammatory process, wound healing, chronic inflammation, and a basic understanding of the biology of cancer. o be able to demonstrate and explain this knowledge using appropriate scientific language; o demonstrate capacity for reading and understand other texts on related topics; o demonstrate interest to health and well-being; o demonstrate ability to communicate key information from the field of general pathology to non-experts; o be able to apply and transmit the fundamentals of general pathology, with particular reference to the inflammatory based disease and cancer.
3	Prerequisites and learning activities	The student must have a basic knowledge of cellular biology and physiology.
4	Teaching methods and language	Lectures PowerPoint presentations in Italian. Ref. Text: G.M. Pontieri, *Elementi di Patologia Generale*/Elements of General Pathology, Ed. Piccin, 2011.
5	Assessment methods and criteria	Written test

Programme of "CHINESIOLOGIA" **"*KINESIOLOGY*"** **This Course is composed of 2 Modules: 1) Kinesiology I , 2) Kinesiology II**		
Number of ECTS credits: 6 (total workload: 150 hours, 1 credit= 25 hours		
D0298, Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 1st year , 2nd semester**		
1) KINESIOLOGY I		
Teacher: Giovanni TRESCA		
1	Course objectives	The course provides the students with the knowledge of principles of human movement according to the latest theories, of Biomechanics of the trunk and spine, of the respiratory mechanics and of the physiology of the walking. Aim of the module is to enable the students to understand the modifications of Kinesiology due to the degenerative pathologies, traumatic injuries, and pathologies of the rachis, to identify the Pathology and, after the patient assessment, to apply the knowledge for a proper choice of exercises.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - The study of movement: From analytic bodybuilder theory, to cognitive theory, From muscle to the motor image, From motion, to the function, to the exercise; - The trunk and the spine: The trunk between movement and posture, The functions of trunk and the midline; - The respiratory mechanics

		- The study of walking - From theory to the exercise: The assessment of Patient, The interpretation of Pathology, Instruments and exercises; -The kinesiology in the degenerative pathologies, traumatic injuries and pathologies of the spine On successful completion of this module, the student should o have profound knowledge of the Biomechanics of the trunk and spine, of the respiratory mechanics and of the physiology of the walking, o have knowledge and understanding of the principles of human movement according to the latest theories, o understand and explain modifications of Kinesiology in the degenerative pathologies, traumatic injuries, and pathologies of the rachis, o understand and interpret the main Pathologies, o demonstrate skill in the patient assessment and ability to make a step from the theory to choice of the exercise, o demonstrate capacity for reading and 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, exercises Language: Italian Ref. Text books: -Kapandji, "*Fisiologia articolare*", Marrapese Ed., 1983. -Reggiani, *"L'immagine motoria come strumento per l'esercizio terapeutico*", Biblioteca A.R. Lurija , 1999. -Ligazzolo, Perfetti, "L'esercizio terapeutico conoscitivo nella patologia ortopedica della spalla", Biblioteca A.R. Lurija , 2007. -Teacher handouts
5	Assessment methods and criteria	Oral exam
2) KINESIOLOGY II		
Teacher: Francesca PISTOIA		
1	Course objectives	The main objectives of the course are to provide essential knowledge of muscular and osteoarticular structures and their physiological functions with respect to human kinetics and to develop basic skills in assessing motor performances in healthy subjects.
2	Course content and Learning outcomes (Dublin descriptors)	Module Topics: -Historical perspective and general principles -The osteoarticular system, muscles and the locomotor function -Contribution of the central and peripheral nervous system in motor learning and control Neuromechanical basis of kinesiology; Newton's Laws of Motion, -Basic and descriptive terminology with respect to body movements; Planes of movement and axes of motion; Main anatomic positions and types of motion; -Neuromotor developmental milestones: Structural and functional kinesiology of the shoulder, elbow and radioulnar joints, wrist and hand joints, hip joint and pelvic girdle, knee, ankle and foot joints; -The general assessment/analysis of movements and balance: basic and advanced techniques On successful completion of this module, the student should: o Have profound knowledge of key anatomical concepts (spatial construction, terminology, regions, systems, anatomical references) o Understand the topographical and functional interdependence of the structures studied o Learn all the basic morphological data necessary to acquire a three-dimensional representation of different systems in the human body o Have a knowledge of the structural and functional kinesiology of main joint systems
3	Prerequisites and learning activities	The student has to know basic principles of musculoskeletal anatomy.
4	Teaching methods and language	Lectures, Ad hoc seminars Language: Italian Ref. Text books:

		Teacher's Notes
5	Assessment methods and criteria	Oral exam

Programme of "METODOLOGIA DELLA RIABILITAZIONE" ***"REHABILITATION METHODOLOGIES"*** **This Course is composed of 2 Modules: 1) *Rehabilitation Methodologies I* , 2) *Rehabilitation Methodologies II***		
D0315, Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 2rd Year, 1st Semester**		
Number of ECTS credits: 6 (total workload is 75 hours; 1 credit=25 hours)		
1) REHABILITATION METHODOLOGIES I		
Teacher: Tito Tabacco		
1	Course objectives	The goal of this course is to provide the students with knowledge of patient's assessment and evaluation and of the main rehabilitation techniques.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Assessment and evaluation of specific pathologies; - Active and passive rehabilitation techniques; - Neuromuscular and proprioceptive facilitations; - Isokinetic methods and techniques; - Cognitive and proprioceptive exercise; - Biofeedback techniques. On successful completion of this module the student should o have profound knowledge of main diseases affecting the patient; o have knowledge and understanding of the main treatment methodologies and techniques; o be able to explain the relevant techniques and tools for the assessment of a patient using appropriate scientific language; o demonstrate skills for a correct evaluation of deficits and ability to identify the targeted treatment and to assess the results; o demonstrate capacity for reading and understand other texts on related topics and to be critical and self-critical; o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate concern to health, well-being and safety; o be able to communicate effectively with the patients and their caregivers; o be able to work in a multidisciplinary team showing commitment to tasks and responsibilities.
3	Prerequisites and learning activities	The student must know anatomy, physiology and pathology about cardio respiratory system.
4	Teaching methods and language	Frontal lectures; team work; tutorials. Language: Italian Ref. Text books -Carnubelli "*Riabilitazione ortopedica*", Mainacke Edi Ermes, 2008.
5	Assessment methods and criteria	Oral exam.
2) REHABILITATION METHODOLOGIES II		
Teacher: Irene Ciancarelli		
Course objectives		The course aim is to provide knowledge and tools for carrying out a correct evaluation of patients and plan a suitable recovery programme. The student will gain - capacities to understand the concept and the importance of the "rehabilitative team" and specific role of physiotherapists inside a multidisciplinary team; - ability to plan specific projects and programs for the most important and frequent neurological diseases by applying the theoretical concepts to specific and concrete pathological situations.
Course content and		Topics of the module include:

Learning outcomes (Dublin descriptors)	-General physiotherapy methodology: Definition of rehabilitation and of the rehabilitative team: the role of physiotherapist, the International Classification of functioning, disability and health (ICF), the International Classification of Impairment, Disabilities, and Handicap (ICIDH), the organization and the planning of the rehabilitative project and programme, the definition of rehabilitative prognosis and outcomes, acquisition of creative problem solving skills and of ability to motivate patients and caregiver ; -Neuromotor evaluation: Main evaluation scales of neurological deficits and disability, Evaluation of muscle tone and strength, sensitivity, balance, coordination, and gait; Central and peripheral paralysis; -Rehabilitative programme: in patients bedridden, with acute and chronic stroke, multiple sclerosis, Parkinson disease, polyneuropathy . On successful completion of this module, the student should o have profound knowledge of physiotherapy theory and methods and ability to apply this knowledge in professional practice; of scientific theories and methods including literature and information searches, documentation and quality development; o have knowledge and understanding of methodology and practical experience for contributing constructively to resolving physiotherapeutic issues of different areas of physiotherapy practice; o illustrate and summarize rehabilitative programs of fundamental neurological diseases and disabilities; o understand the principles contained in ICF and in ICIDH; o demonstrate skill in analyzing, assessing, and evaluating problems with movements and functioning as well as the patient's capacities and resources to take suitable decisions and ability to identify realistic goals of physiotherapeutic intervention and plan well tailored rehabilitative programme in accordance with patient's life and expectations; o demonstrate capacity for communicate with patients, relatives, caregivers, and other professional figures in multidisciplinary collaboration.
Prerequisites and learning activities	The student must know basics of anatomy, kinesiology, neurology semeiotic and diseases.
Teaching methods and language	Lectures, team work, home work Language: Italian Ref. Text books: R. Greenwood, M.P. Barnes, T.M. McMillan, C.D. Ward. *Riabilitazione delle malattie neurologiche*, UTET, 1998. N. Basaglia *Progettare la riabilitazione*, Edi Ermes, 2002.
Assessment methods and criteria	Oral exam.

Programme of "SCIENZE NEUROLOGICHE" ***"NEUROLOGICAL SCIENCES"*** **This course is composed by 2 modules: 1)"Neurology" and 2)"Neurological Rehabilitation"**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit=25 hours)		
D0447, Compulsory **1st Cycle Degree in PHYSIOTHERAPY,2nd Year, 1st Semester**		
1) NEUROLOGY		
Teacher: **Antonio CAROLEI**		
1	Course objectives	The main objectives of the course are as follows: • To provide essential knowledge of neurological diseases with respect to epidemiology, pathogenesis, and clinical picture • To provide essential knowledge of diagnostic methods and therapeutic approaches in neurological diseases
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: 1. The neurological patient 2. Anatomy and physiology of the central and peripheral nervous system 3. The neurological examination

		4. Major clinical syndromes 5. Cerebrovascular diseases 6. Traumatic brain injury and disorders of consciousness 7. Meningitis and encephalitis 8. Epilepsy 9. Movement disorders 10. Dementias 11. Amyotrophic lateral sclerosis 12. Muscle and neuromuscular diseases 13. Metabolic encephalopathies 14. Demyelinating diseases 15. Myelitis On successful completion of this module the student should: o Have knowledge of key anatomical and physiological concepts(cerebral areas and neural pathways, functional neural systems which are impaired in neurological diseases) o Have knowledge of main neurological diseases o Have knowledge of main assessment tools (laboratory and instrumental tools, clinical scales) in neurological diseases o Identify the factors which can influence the outcome of neurological diseases
3	Prerequisites and learning activities	The student has to know basic principles and notions of central and peripheral nervous systems anatomy
4	Teaching methods and language	Frontal lessons, ad hoc seminars Language: Italian, English Ref. Text Books: – Robert C. Collins, *Neurologia*, Edises Editore, 1999 *(Italian)* – Robert C. Collins, *Neurology*, *Saunders Text and Review Series*, Edition 1, Saunders1997 Elsevier Health Sciences *(English)*
5	Assessment methods and criteria	Oral exam
2) NEUROLOGICAL REHABILITATION		
Teacher: **Antonio CAROLEI**		
1	Course objectives	The main objectives of the course are as follows: • To provide essential knowledge of rehabilitative approaches in neurological diseases • To develop basic skills in planning successful rehabilitation in patients with severe brain injury and disability
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: 1. The evaluation of the patient for neurological rehabilitation 2. Plasticity mechanisms and neuromuscular facilitation techniques 3. Physical therapy 4. Rehabilitation of neuromuscular diseases 5. Rehabilitation of severe traumatic brain injury 6. Stroke rehabilitation 7. Rehabilitation of Parkinson's disease 8. Rehabilitation of motor neuron diseases 9. Rehabilitation of peripheral nerves diseases 10. Rehabilitation of multiple sclerosis On successful completion of this module the student should o Have knowledge of key anatomical and physiological concepts underlying rehabilitation (neuroplasticity, brain complexity, brain organization and segregation, brain learning) o Identify the main factors which can influence neurological outcome during rehabilitation o Have knowledge of current international neurorehabilitation guidelines o Apply the most appropriate rehabilitative treatment to the different neurological disabilities.
3	Prerequisites and learning activities	The student has to know basic principles and notions of neurological diseases
4	Teaching methods and language	Lectures and practical exercises. Language: Italian, English Ref. Text books:

		-Sandrini G., Dattola R., *Compendio di Neuroriabilitazione*, Verduci Editore, 2012.
5	Assessment methods and criteria	Oral exam

Programme of "MALATTIE DELL'APPARATO LOCOMOTORE E CHINESITERAPIA SPECIALE" ***"DISEASES OF THE LOCOMOTOR APPARATUS AND SPECIAL KINESITHERAPY"*** **This course is composed by 2 Modules: 1) Diseases of locomotor apparatus, 2) Special Kinesitherapy**		
D4104, Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 2nd year, 1st semester**		
Number of ECTS credits: 6 (total workload:150 hours, 1 credit =25 hours)		
1) DISEASES OF LOCOMOTOR APPARATUS		
Teacher: Vittorio CALVISI		
1	Course objectives	The module provides the students with the knowledge of the musculoskeletal system and of its main disorders due to both chronic and traumatic diseases and to surgical intervention. The aim is to enable the students to understand the locomotor system, the main surgical and nonsurgical means to treat musculoskeletal trauma, sports injuries, degenerative diseases, infections, tumors, and congenital disorders in order to identify, plan and apply the relevant rehabilitation techniques.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Introduction to musculoskeletal system structure, body alignment, biomechanics, - Bone diseases and disorders, - Chronic arthropathies -Traumatic musculoskeletal disease -Main surgical treatments and appropriate rehabilitation treatments designed to facilitate the process of recovery from injury to as normal a condition as possible. On successful completion of this module, the student should o have acquired knowledge of the musculoskeletal system: anatomy and biomechanics; o know and understand the systemic diseases affecting the musculoskeletal system; o know and explain sports injuries & related surgery; o be able to make a musculoskeletal system examinations; o have capacity to use the knowledge acquired to the rehabilitation practice.
3	Prerequisites and learning activities	The student must know: anatomy, physiology, physics
4	Teaching methods and language	Lectures and study at home Language: Italian Ref. Text Book: -Mancini Morlacchi "*Clinica ortopedica manuale: atlante*", Piccin ed., 2011
5	Assessment methods and criteria	Oral exam and practical test.
2) SPECIAL KINESITHERAPY		
Teacher: Rosella GENTILE		
1	Course objectives	The main objective of the module is to provide the student with theoretical and practical skills for the assessment of the main clinical pathologies and the application of specific evaluation protocols. The student will be able to design, plan and execute the rehabilitative intervention by identifying: the therapeutic modalities most appropriate to achieve the objectives, the timing of application, the instruments with a view to a comprehensive approach taking into due account relative indications and contraindications.
2	Course content and Learning outcomes (Dublin descriptors)	Module contents include: - Foundation of neurophysiology on which rehabilitation is based; - Neurological mechanisms underlying functional recovery and motor learning; - Assessment methods and protocols - main neuromotor rehabilitation techniques, Kabat and Bobath techniques; - neurocognitive approach developed by Prof. Perfetti and method application (ETC and CTA) On successful completion of this module, the student should: o Have knowledge of theories on which rehabilitation methodologies are based;

		o Have knowledge of and understanding of specific evaluation protocols for the different neurological diseases; o Be able to compile a rehabilitation folder with patient profile, expected changes at short, medium and long term, treatment program and results' evaluation; o Have acquired knowledge of the main neuromotor rehabilitation techniques and skills for application of Kabat and Bobath techniques; o Have acquired knowledge of the neurocognitive approach developed by Prof. Perfetti and skill and ability to apply the method: ETC and CTA.
3	Prerequisites and learning activities	The student must know basics of kinesiology and neurology semeiotic
4	Teaching methods and language	Lectures, team work, home work Language: Italian Ref. Text books: -M. Formica e coll. "*Trattato di Neurologia Riabilitativa*", Marrapese Ed, 1989. -H. Masur *"Scale e punteggi quantificazione di deficit neurologici*", Edi-Ermes, 1999. -C. Perfetti "*La rieducazione motoria dell'emiplegi*co", Ghedimedia, 1986. -C. Perfetti, A. Pieroni *"La logica dell'esercizio*", Idelson-Gnocchi, 1992 -C. Perfetti "*Movimento,azione e recupero*",Idelson-Gnocchi, 1992. -C. Perfetti , V. Noccioli "*Cervelletto e processi cognitivi",* Biblioteca Lurjia Ed, 1999. -C. Perfetti A. Pieroni "*L'immagine motoria",* Biblioteca Lurjia Ed, 1999.
5	Assessment methods and criteria	The exam consists of an oral test and a practical demonstration of the application of the techniques

Programme of "SCIENZE MEDICHE E PSICHIATRIA" ***"MEDICAL SCIENCES AND PSYCHIATRY"*** **This Course is composed of 3 Modules: 1) Internal Medicine, 2) Rheumatology, 3) Psychiatry**		
D4105, Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 2rd Year, 2nd Semester**		
Number of ECTS credits: 7 (total workload is 175 hours; 1 credit=25 hours)		
1) INTERNAL MEDICINE		
Teacher: Giovanbattista DESIDERI		
1	Course objectives	The course aims to provide students with a basic but accurate formation on the most relevant disabling diseases of internal medicine and geriatrics expertise, with particular attention to the ones most interesting and most frequently encountered in clinical practice.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - the main diseases of brain and of cardiovascular, respiratory, gastrointestinal and urinary systems, - metabolic diseases, ischemic heart disease, heart failure, stroke, dementia, chronic obstructive pulmonary disease, asthma, inflammatory bowel disease, chronic renal failure, diabetes. On successful completion of this module, the student should o have knowledge of the most relevant diseases of brain and of cardiovascular, respiratory, gastrointestinal and urinary systems, metabolic diseases; o have knowledge and understanding of the main clinical manifestations of the above described diseases; o understand and explain the most relevant symptoms that could be referred and/or signs that could be presented by the patients; o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	Basic knowledge of anatomy and physiology
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text books: Harrison, *Trattato di Medicina Interna*, Ed. M.G.H.
5	Assessment methods and criteria	Oral exam

	2) RHEUMATOLOHY	
Teacher: Roberto GIACOMELLI		
1	Course objectives	This module aims to enable the student to feel comfortable in evaluating patients with rheumatic diseases and focuses on learning about rheumatic and immunologic illnesses. 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)	Course content and Learning Goals: The Rheumatology course focuses on learning about rheumatic and immunologic illnesses and aims - To gain an understanding of the breadth of rheumatic disease; - To focus upon approaches to diagnosis based upon the history, physical examination, and simple laboratory and radiology tests; - To appreciate the degree to which biologic therapies are altering the ways in which patients with immunologic illnesses are treated. At the end of the module, the student should be able to: o obtain proficiency in performing a comprehensive musculoskeletal exam; 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 know the use of corticosteroids, nonsteroidal anti-inflammatory agents and immunosuppressive agents in rheumatic diseases; 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.
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 and English Text book: Perricone R. , Giacomelli R. *"Malattie Autoimmuni Sistemiche",* SEU, 2013
5	Assessment methods and criteria	Oral exam
	3) PSYCHIATRY	
Teacher: Massimo CASACCHIA		
1	Course objectives	The goal of this course is to provide the knowledge of the main psychiatric disorders that can affect the patients treated by physiotherapists. On successful completion of this module, the students should understand the concept of mental health and the limitations imposed by mental disorders on their patients. 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)	Topics of the module include: - the organization of community-based mental health services in Italy; - psychopathology (disorders of perception, disorders of thought, disorders of memory, disorders of emotion, with a special attention to disorders of consciousness); - Anxiety Disorders: clinical physiopathology and therapy; - Mood Disorders: clinical physiopathology and therapy. On successful completion of this module, the student should:

		- have profound knowledge of the organization of the psychiatric care in Italian community-based services o have knowledge and understanding of main psychiatric disorders in (neurological, orthopedics, disabled, etc.) patients that they will care in their profession o understand and explain psychiatric symptoms and the limitations induced by the psychiatric symptoms in their patients distinguish them from their disabling condition o understand psychological sufferance cause by mental disorders o demonstrate skill in communication with patients and their caregivers and ability to refer them to appropriate care services and professionals, o demonstrate capacity for reading and understand other texts and consult scientific data-base on related topics
3	Prerequisites and learning activities	The student must have a basic knowledge of neuroanatomy and central nervous system physiology.
4	Teaching methods and language	Lectures, workshop. Language: Italian, English Ref. Text books Bogetto F. Maina G. *Elementi di Psichiatria*. Ed. Minerva Medica, Torino, 2006.
5	Assessment methods and criteria	Written exam.

Programme of **"NEUROPSICHIATRIA INFANTILE E METODI DI RIABILITAZIONE IN ETÀ EVOLUTIVA"** ***"CHILD NEUROPSYCHIATRY AND REHABILITATION METHODS ON CHILDHOOD"*** **This course is composed by 2 modules: 1)"Child Neuropsychiatry" , 2) "Rehabilitation Methods"**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit=25 hours)		
D0448 , Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 2nd Year, 2nd Semester**		
1) CHILD NEUROPSYCHIATRY		
Teacher: **Elisabetta TOZZI**		
1	Course objectives	The goal of this course is to provide the students with scientific knowledge enabling them to understand the child development peculiarities since the psycho physiological birth and to assess the possible side motor, cognitive, behavioral, affective and socio-relational alterations as well to evaluate the methods of neurological diseases evolution and of rehabilitation of some of the main forms of neurological infant and child diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Maturing and development of the central nervous system; - The motor skills of the baby and its development; the reflexes of the newborn and infant equilibrium reactions; - The perinatal damage: hypoxic and ischemic encephalopathy of the term and preterm newborn; - Malformations of the CNS; - The infantile cerebral palsy: classification, clinical comorbidities and complications; - The motor and verbal dyspraxia; - The epilepsies of infants and children; - The mental retardation and mental disability; - The posture, the body image and its pathologies (vertigo, ataxia, headaches). On successful completion of this module the student should o have profound knowledge of children development and neurological disease evolution; o have knowledge and understanding of functional deficits and clinical comorbidities; o demonstrate skill for a correct assessment of neurobehavioral functions of babies in healthy and pathological settings and ability to identify the neurological and mental disability; o be able to classify pyramidal and extrapyramidal damage and recognize dyspraxia and cerebral palsy; o be able to apply the charge of disability;

		o demonstrate capacity for reading and understand other texts on related topics. o be able to explain the relevant techniques in diagnostics using appropriate scientific language; o be able to communicate effectively with the young patients and their parents and to work in a multidisciplinary team, showing commitment to responsibilities.
3	Prerequisites and learning activities	The student must know the basic notions of Neurology and Neuro-rehabilitation, Pediatrics.
4	Teaching methods and language	Lectures and practical exercises. Language: Italian and English Ref. Text books -Roberto Militerni *"Neuropsichiatria infantile*", Ed . Idelson - Gnocchi, 2004 - Teacher's Notes
5	Assessment methods and criteria	Oral exam
2) REHABILITATION METHODS FOR CHILDREN		
Teacher: Piera GALEOTA		
1	Course objectives	The goal of this course is to provide the students with rationale and scientific knowledge of children psychomotor development, of main functional alterations due to cerebropathies, and of the possible rehabilitation methodologies. On successful completion of this module, the student should be able to evaluate the main development disfunctionalities and identify the rehabilitation treatment.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Psychomotor development of a child in the first year of life -Adaptative functions -evaluation and assessment of a child: neurological exam and behavioral evaluation -children cerebral paralysis: definition and classification criteria -children rehabilitation setting -psychomotricity and body scheme -methodologies and guidelines for children rehabilitation - Children Rehabilitation Paper. On successful completion of this module the student should o have profound knowledge of children neuro-psychomotor development; o have knowledge and understanding of functional deficits, classification of CCP, guidelines for the rehabilitation treatment of CCP and their significance; o be able to explain the relevant techniques in diagnostics using appropriate scientific language; o demonstrate skill for a correct evaluation of deficits and ability to identify the targeted treatment and assess the results; o demonstrate capacity for reading and understand other texts on related topics. o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate concern to health, well-being and safety; o be able to communicate effectively with the young patients and their parents; - be able to work in a multidisciplinary team showing commitment to tasks and responsibilities; o demonstrate capacity to be critical and self-critical.
3	Prerequisites and learning activities	The student must know the basic notions of Pediatric Neuropsychiatry
4	Teaching methods and language	Lectures and practical exercises. Language: Italian Ref. Text books -E. Fedrizzi *"I disordini dello sviluppo motorio",* Piccin Ed., 2004. - Teacher's Notes
5	Assessment methods and criteria	Oral exam

Programme of "PRONTO SOCCORSO E SCIENZE MEDICO TECNICHE APPLICATE"
"FIRST AID AND APPLIED MEDICAL TECHNICAL SCIENCES"

This course is composed of 2 Modules: 1) *Anesthesiology* and 2) *Applied Medical Technical Sciences*

D4107, COMPULSORY

1st Cycle Degree in "PHYSIOTHERAPY", 3rd year, 1st semester		
Number of ECTS credits:6 (total workload: 150 Hours, 1 credit = 25 hours)		
1) ANESTHESIOLOGY		
Teacher: FRANCO MARINANGELI		
1	Course objectives	The Module provides the students with the theoretical-practical bases of first aid and allows them to acquire the basic notions of the anesthesiology practice and analgesic therapy.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: CARDIOPULMONARY ARREST: CAUSES AND PHYSIOPATHOLOGY: Algorithm of bls, Basic trauma care, Techniques of rcp, bases and using of dea- ANESTHESIA: historical elements of anesthesia, preoperative evaluation, general anesthesia, induction and tracheal intubation, maintenance and the awakening anesthesia, loco regional anesthesia: definition and physiopathology, spinal anesthesia, epidural anesthesia PAIN THERAPY physiopathology of pain, acute and chronic pain, nsaids opioids adjiuvant On successful completion of this module, the student should o have acquired knowledge and understanding of the bases of first aid; o be able to apply the learnt techniques in critical situations; o have acquired knowledge and understanding of pain therapy tools and techniques; o identify and explain the critical concrete situations; o Be able to communicate effectively to patients and caregivers; o critically read and learn scientific reports.
3	Prerequisites and learning activities	
4	Teaching methods and language	Lectures, on field and home work Language: ITALIAN Ref. Text Books -Miller R.D. *"Anesthesia*", Ed.Saunders, 2009. -Marino P.L. "*Terapia Intensiva*", Masson, 2007. -Teacher's Notes
5	Assessment methods and criteria	Oral Exam
2) APPLIED MEDICAL TECHNICAL SCIENCES		
Teacher: Mario GIANNONI		
1	Course objectives	This module focuses on first aid techniques and practice in critical situations due to oral diseases. The students will acquire knowledge and skills for cope with patients' acute pain of oral district.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Stomatognathic system within the global view of human organism, - Correlations between the oral pathologies with other symptoms, with particular reference to malocclusions and serious consequences on the general healthy status. On successful completion of this module, the student should: o have acquired good knowledge of oral Diseases: dental caries, halitosis, dental erosions and periodontal disease; o have acquired knowledge and understanding of the connections between dental diseases and other disorders and pain; o demonstrate skill and ability to identify the patient problems in a global view of his organism; o have skills and capacity to apply theory to concrete cases and to up-date his knowledge.
3	Prerequisites and learning activities	The student must know the main aspects of the anatomy and physiology of the oral cavity
4	Teaching methods and language	Lectures, presentation, exercitation Language: Italian and scientific English Ref. Text Books: Teacher's Notes

5	Assessment methods and criteria	Oral exam.

Programme of "MALATTIE DELL'APPARATO CARDIOVASCOLARE E RIABILITAZIONE CARDIO-RESPIRATORIA" "*CARDIOVASCULAR DISEASES and CARDIORESPIRATORY REHABILITATION*" This Course is composed of 2 Modules: 1) Cardiovascular Diseases , 2) Cardio respiratory Rehabilitation		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
D4058, Compulsory 1st Cycle Degree in PHYSIOTHERAPY, 3rd year , 1st semester		
1) CARDIOVASCULAR DISEASES		
Teacher: Silvio ROMANO		
1	Course objectives and Learning outcomes	The goal of this course is to provide the knowledge of pathophysiology, symptoms and clinical presentation of the main cardiovascular disease and disorders, of the diagnostic methods used in the functional evaluation of cardiac patients, of cardiovascular effects of rehabilitation. On successful completion of this module, the student should understand the clinical and functional findings of a cardiac patients, and consequently plan a rehabilitation program
2	Dublin descriptors	Topics of the module include: Main symptoms in cardiac patients, Cardiovascular semeiotics, risk factors for cardiovascular disease, diagnostic examination in cardiac patients, Coronary artery disease, hypertension, ECG , Arrhythmias, Syncope, Valvular heart diseases, Heart failure, cardiac arrest and cardiorespiratory resuscitation. On successful completion of this module, the student should o have profound knowledge of basic symptoms in cardiac patients, o have knowledge and understanding of pathophysiology of the main cardiovascular diseases, o understand and explain the clinical profile of patients undergoing cardiac rehabilitation o understand advantages, limits and contraindications to cardiac rehabilitation, o demonstrate skills in the functional evaluation of cardiac patients and ability to early recognize potentially life threatening clinical manifestations, o demonstrate capacity for reading and understanding of other texts on related topics and apply the knowledge in planning a rehabilitation program.
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 M. Penco. *"Dispense di Cardiologia per le lauree triennali nelle professioni sanitarie"*, Cesi Edizioni
5	Assessment methods	Oral exam
2) CARDIORESPIRATORY REHABILITATION		
Teacher: Marco PASTA		
1	Course objectives	The goal of this course is to provide the knowledge about the cardio respiratory system and the main techniques and methodologies to cope with the consequences of pathological events. On successful completion of this module, the students should understand the fundamental concepts of cardio respiratory rehabilitation and be able to apply the learnt methodologies/tools to concrete cases occurring to their professional life.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Elements of anatomy - Ribs-vertebral biomechanics - Exercise training for pulmonary patient - Diaphragmatic gymnastics - Unblocking bronchial and postural drainage

		- Rehabilitation in case of respiratory disease: ▪ BPCO ▪ Fibrosis ▪ Neuromuscular diseases ▪ Pneumonia ▪ Pleurisy ▪ Surgery - Overall treatment vertebral medullar traumatized in acute phase - Incentive spirometry - Rehabilitation treatment of the patient affected by IMA - Rehabilitation treatment of the patient with coronary bypass On successful completion of this module the student should o have profound knowledge of main diseases affecting cardio respiratory system; o have knowledge and understanding of the main treatment methodologies and techniques; o be able to explain the relevant techniques and tools for the assessment of a patient using appropriate scientific language; o demonstrate skill for a correct evaluation of deficits and ability to identify the targeted treatment and assess the results; o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate concern to health, well-being and safety; o be able to communicate effectively with the patients and their caregivers; o be able to work in a multidisciplinary team showing commitment to tasks and responsibilities; o demonstrate capacity for reading and understanding other texts on related topics and to be critical and self-critical.
3	Prerequisites and learning activities	The student must know anatomy, physiology and pathology about cardio respiratory system.
4	Teaching methods and language	Frontal lectures; team work; tutorials. Language: Italian Ref. Text books: Teacher's Notes
5	Assessment methods and criteria	Oral exam.

Programme of "MEDICINA FISICA E RIABILITAZIONE" ***"PHYSICAL MEDICINE AND REHABILITATION"*** **The course is composed by two Modules:** **1) "Physical Medicine and Rehabilitation I", 2) "Physical Medicine and Rehabilitation II"**		
D0341 ,Compulsory **1st Cycle Degree in PHYSIOTHERAPY, 3rd Year, 1st Semester**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit=25 hours)		
1) PHYSICAL MEDICINE AND REHABILITATION I		
Teacher: Giorgio SPACCA		
1	Course objectives	The goal of this course is to provide the students with knowledge of the main rehabilitation techniques and their role in the patient's functional recovery process.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Healing process and rehabilitation programme (stretching and joint mobilization, characteristics of isometric, isotonic and isokinetic contraction ; - Neuromuscular control (proprioceptive mechanisms and rehabilitation; the balance, posture and postural recovery, pliometrics); - Means and tools in rehabilitation medicine (the main techniques); - Functional evaluation in rehabilitation medicine. On successful completion of this module the student should o have profound knowledge of main physical functional dysfunctions affecting the patient;

		o have knowledge and understanding of the main treatment methodologies and techniques for functional recovery; o be able to explain the relevant techniques and tools for the assessment of a patient using appropriate scientific background and language; o demonstrate skills for a correct functional evaluation of deficits and ability to identify the targeted treatment and to assess the results; o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate capacity for reading and understand other texts on related topics and to be critical and self-critical.
3	Prerequisites and learning activities	The student must know anatomy, physiology and pathology about neuromuscular system.
4	Teaching methods and language	Lectures; team work; tutorials. Language: Italian Ref. Text books: - Morlacchi-Mancini "*Atlante di Clinica Ortopedica*", Piccin Ed., 2003. - N. Basaglia "*Trattato di Medicina Riabilitativa*", Ed. Idelson Gnocchi, 2009.
5	Assessment methods and criteria	Oral exam.
2) PHYSICAL MEDICINE AND REHABILITATION II		
Teacher: Gianfranco PROPERZI		
1	Course objectives	The goal of this course is 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)	Topics of the module include: - Rehabilitation of the upper limb (shoulder, elbow, wrist); - Rehabilitation of the lower limb (hip, knee, ankle); -Rehabilitation of the vertebral column (cervical, thoracic, lumbar, sacral, coccygeal) - Rehabilitation of spine dimorphisms - Anatomical and functional mechanisms of post-lesion restructuring of nervous system (Rehabilitation of peripheral nervous system lesions, of spinal cord lesions, of traumatic brain injuries). On successful completion of this module the student should o have profound knowledge of the main spine lesions and dimorphisms; o have knowledge and understanding of the goals of rehabilitation for various diseases and of the main treatment methodologies and techniques for functional recovery; o be able to explain the relevant techniques and tools for the assessment of a patient using appropriate scientific language; o demonstrate ability to identify the targeted treatment and to assess the results; o be able to apply the acquired knowledge to concrete cases as occurring in the professional life; o demonstrate concern to health, well-being and safety; o be able to communicate effectively with the patients and their caregivers; o demonstrate capacity for reading and understanding other texts on related topics and to be critical and self-critical.
3	Prerequisites and learning activities	The student must know anatomy, physiology and pathology about musculoskeletal system.
4	Teaching methods and language	Lectures; team work; tutorials. Language: Italian Ref. Text books: - Randall L. Braddom "*Physical Medicine and Rehabilitation*", Ed A. Delfino, 2011. - N. Basaglia "*Trattato di Medicina Riabilitativa*", Ed. Idelson Gnocchi, 2009. - W. E. Prentice "*Rehabilitation Techniques in Sports Medicine*", UTET, 1999.
5	Assessment methods and criteria	Oral exam.

Programme of "MANAGEMENT SANITARIO E IGIENE"

"HYGIENE AND HEALTH MANAGEMENT SCIENCES "		
The course is composed of 3 Modules: **1) Business Organisation, 2) General and Applied Hygiene, and 3) Forensic Medicine**		
D4106, Compulsory **1st Cycle Degree in "PHYSIOTHERAPY", 3rd year, 2nd semester**		
Number of ECTS credits: 9 (total workload: 225 hours, 1 credit = 25 hours)		
1) BUSINESS ORGANISATION		
Teacher: Leondino MAMMARELLA		
1	Course objectives	The course aims to give students the basic knowledge of the organization of health services with focus on economic evaluation techniques. The student will understand the complex economic setting where the health services are provided and need to find integration.
2	Course content and Learning outcomes (Dublin descriptors)	Course content : - Health Systems (NHS , other international models), - Health economics: basic concepts, - The financing of health care, - The demand for health, - The provision of health services, - Equity , Quality, Effectiveness and Efficacy, efficiency At the end of the Module the student will o know the health systems and the correlated issues; o know and explain the main features of the health "market" functioning with particular emphasis on the Italian model; o have acquired ability to use the basic principles of the cost / benefits ratio, efficacy and effectiveness; o have acquired capacity to analyze and develop strategies for the rationalization of health expenditure; o be able to assess the efficaciousness of the services and plan adjustments.
3	Prerequisites and learning activities	Cultural background from Secondary Schools
4	Teaching methods and language	Lectures and team work Language: italian Ref. Text books; - Levaggi R., Capri S., *"Economia sanitaria"(*Health Economics), Franco Angeli,Milano 2008 - Dirindin N. e Vineis P. "*Elementi di Economia Sanitaria"* (Elements of Health Economics), Il Mulino, Bologna, 2003, - De Viincenti C., Finocchi Ghersi R., Tardiola A. *"La sanità in Italia. Organizzazione, governo, regolazione, mercato"(* Healthcare Organization in Italy, government regulation , market), Il Mulino, Bologna 2002, - Saraceno C. *"Il Welfare",* Il Mulino, 2013.
5	Assessment methods and criteria	Oral examination to assess the learning of the various aspects of the program and evaluate the critical capacity of students.
2) GENERAL AND APPLIED HYGIENE		
Teacher: Stefano NECOZIONE		
1	Course objectives	Provide students with knowledge and understanding of the tools and the basic methodology to develop and use proper and specific concepts of hygiene in the prevention of infectious and non infectious diseases in hospital and non-hospital setting. Among the competences acquired, students will be able to develop self-analysis of certain health risk factors, to plan prevention strategies both individual and collective, and to design interventions to promote the health and safety of health care workers and customers.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Concepts of Health and Illness and Aetiology of Illness; -Principles and Practice of Health Promotion; -Epidemiology: general aspects. epidemiology measures, types of Epidemiologic Study -Aims and methods of prevention: primary prevention, secondary prevention (screening), tertiary prevention and rehabilitation; -General prophylaxis for infectious diseases; hospital hygiene; Hospital infections. -General prevention of non infectious diseases.

		By the end of the course the student o has acquired knowledge of the determinant factors of health and disease; o knows the fundamental means to prevent the main infectious and non-infectious diseases; o is able to apply the learnt methodologies and tools; o is able to up-date his knowledge by reading and understanding scientific reports; o is able to communicate effectively to expert and non-expert audience
3	Prerequisites and learning activities	No Prerequisites are needed
4	Teaching methods and language	Lectures, team work, exercises, home work, report, Language: Italian Ref. Text books: -Barbuti S, Bellelli E, Fara G.M., Giammanco G. *"Igiene",* Monduzzi Ed., 2011.
5	Assessment methods and criteria	Written and oral exam
3) FORENSIC MEDICINE		
Teacher: Elio NARDECCHIA		
1	Course objectives	Aims of this module is to provide the students with the main legal problems occurring in the health services practice. The students are given the opportunity to have a general overview of the field and at the same time to acquire medico-legal expertise founded in current scientific knowledge and devoid of bias.
2	Course content and Learning outcomes (Dublin descriptors)	Module contents: -Statutory law related to the practice of medicine; medico-legal systems in Italy and abroad; giving evidence in court; preparing medico-legal reports; -tort of negligence/consent; confidentiality; informed consent; Mental Treatment Act; toxicology; drugs of abuse; basic forensic pathology; European Union Law; -The death's ascertainment, Medical negligence claims; Non-accidental injury; -Basics of bioethics and professional ethic, -The professional liability within the sanitary activities; documentation, connected crimes; Risk management. -Nods of criminal Law: imputability and liability. The crimes: concept, classification of the crimes and the constitutive elements. The bodily harm. -Nods of civil law: civil capacity and evaluation of the damage. On successful completion of this module, students should be able to: o Define and explain the different categories and principles of Italian law related to the practice of medicine. o Describe the identifying features at a scene of death to distinguish between an accidental death, suicide, homicide and death by natural causes. o Describe basic wound patterns and the characteristic features of traumatic deaths (e.g. hanging, shooting, traffic accidents, asphyxia, drowning). o Explain how to identify a decomposed body or skeletal remains and how to establish the time of death. o Discuss the role of the expert witness in court proceedings and summarise advise on giving evidence in court.
3	Prerequisites and learning activities	Basic medical sciences
4	Teaching methods and language	Lectures in classroom Language: Italian Ref. Text books: -T. Feola, M. Arcangeli, E. Nardecchia, "*Appunti di medicina legale*", Minerva Medica 2014. -P. Arbarello, T. Feola, M. Arcangeli, M. Vaccaro *"Medicina legale per le professioni sanitarie: Diritto, Deontologia, Legislazione Sociale",* Minerva Medica 2010 .
5	Assessment methods and criteria	oral exam

Programme of "FARMACOLOGIA"
"PHARMACOLOGY"

D0488, compulsory **1st Cycle Degree in PHYSIOTHERAPY, 3RD year, 2nd semester**		
Number of ECTS credits: 3 (total workload is 75 hours; 1 credit = 25 hours)		
Teacher: Maria Francesca COPPOLINO		
1	Course objectives and learning outcomes	The goal of this course is to provide students with a comprehensive introduction to the general pharmacologic principles that govern the action of all drugs on the body. This is followed by a detailed, systematic consideration of major drugs used in specific clinical situations, especially the drugs commonly used in physiotherapy. On successful completion of this module, the student should understand the molecular mechanisms of drug action (pharmacodynamics); mechanisms of absorption, distribution, metabolism and excretion of drugs (pharmacokinetics) and the clinical use of drugs in the diagnosis, prevention, and treatment of disease (pharmacotherapy). A pharmacology course should teach the student the principles of pharmacology along with the process of pharmacologic reasoning.
2	Course content and Dublin descriptors	Topics of the module include: Pharmacokinetics. Pharmacodynamics. Autonomic pharmacology. CNS drugs. Cardiovascular drugs. Endocrine pharmacology. Pain drug therapy. Anti-inflammatory agents. Pharmacological treatments for spasticity. Chemotherapy of Infectious disease On successful completion of this module, the student should o have profound knowledge of basic pharmacologic principles that govern the action of all drugs on the body; o have knowledge and understanding how specifics characteristics of patient and the genetics can affect the response to a particular class of drugs; o understand and explain the rationale behind designing different dosing regimens of particular drugs in specific patient populations; o understand the pharmacology and clinical use of the major class of clinically important drugs; o demonstrate skill in recognize adverse effects and drug interaction; o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must have the fundamentals of biology, biochemistry and physiology
4	Teaching methods and language	Lectures. Language: Italian Ref. Text books: -Richard D. Howland-Mary J. Mycek, *Le basi della farmacologia,* Zanichelli, 2007 -Katzung B.G.,Master S.B., Trevor A.J., *Farmacologia generale e clinica*, Piccin 2011
5	Assessment methods and criteria	Written and oral exam