UNIVERSITY OF L'AQUILA

Department of Health, Life and Environmental Sciences

Single 2nd Cycle Degree in DENTISTRY

Laurea Magistrale a Ciclo Unico in ODONTOIATRIA

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 Single Second Cycle Degree in DENTISTRY				
YEAR	**CODE**	**COURSE**	**Credits (ECTS)**	**Semester**
I	D3388	Basic and Applied Human Anatomy	11	1 and 2
	D3104	Biochemistry	12	1 and 2
	D0260	Applied Biology	8	1
	D3384	Applied Physics	7	1
	D3396	General and Applied Histology	7	1
	D3402	Scientific Methodology, Informatics and English Language	15	2
II	D4053	General and Applied Physiology	10	1 and 2
	D4339	Clinical Biochemistry and Molecular Biology	3	1
	D1758	General Pathology and Immunology	7	1
	D3454	Hygiene and Microbiology	14	2
	D3430	Foundations of Preventive and Community Dentistry	15	2
III	D3346	Laboratory Diagnostics	9	1
	D0488	Pharmacology	6	1
	D3464	Dental Materials and Prosthetic Technologies	15	1
	D3142	Special Odontostomatologic Pathology	10	1 and 2
	D4353	Diagnostic Imaging and Radiotherapy	8	2
	D3514	Medical Sciences I	10	2
	D3528	Medical Sciences II	9	2

IV	D4361	Oral Surgery I	5	1 and 2
	D3552	Neurology, Psychiatrics and Psychology	6	1
	D3560	Surgical Sciences	15	1
	D4360	Forensic Medicine	4	1
	D3592	Orthodontics and Gnathology	10	1 and 2
	D3584	Cariology and Conservative Dentistry	9	2
	D3602	Periodontology and Prosthodontics	11	2
V	D3612	Endodontics and Restorative Dentistry	8	1
	D3632	Periodontology	7	1
	D3650	Pathology and Maxillo-Facial Surgery	10	1
	D3696	Prosthodontics	4	1
	D4381	Clinical Odontostomatology	6	2
	D3728	Implantology	9	2
	D3714	Pediatric Dentistry	9	2
	D3702	Orthodontics	7	2
VI	D3754 D3756 D3758 D3760 D3762	*Work Placement I:* ✓ Restorative Dentistry (5 ECTS) ✓ Endodontics (5 ECTS) ✓ Pediatric Dentistry (4 ECTS) ✓ Preventive and Community Dentistry (4 ECTS) ✓ Clinical Odontostomatology (5 ECTS)	23	1
	D3624 D3704 D3766 D3772 D3778	*Work Placement II:* ✓ Periodontology (5 ECTS) ✓ Orthodontics and Gnathology (5 ECTS) ✓ Gnatology (3 ECTS) ✓ Prosthodontics (5 ECTS) ✓ Oral Surgery (5 ECTS)	23	2
		Optional Activities/Courses	8	1 or 2
		Thesis	10	2

Programme of "ANATOMIA UMANA ED APPLICATA"

"BASIC AND APPLIED HUMAN ANATOMY"

"Shape and morphology of cells and tissues, human body anatomy, stomatognathic system"

This course is developed in two semesters and is composed of four Modules: 1)Human Body planning and gross anatomy of all apparatuses, 2) Microanatomy and"In vivo" Imagingof human organs, 3) Neuroendocrine systemmorphology and functional organization, 4) Anatomy of StomatognathicApparatus

D3388,Compulsory

Single Second Cycle Degree in DENTISTRY, 1st year, 1st and 2nd semester

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

Module A: Macro, microanatomy and imaging of human body organs(5 ECTS) 1st semester

Module B: Applied anatomy for stomatognaticsystem and Neuroendocrineanatomy (6 ECTS)2nd semester

1) HUMAN BODY PLANNING AND GROSS ANATOMY OF ALL APPARATUSES (3 ECTS)

Teacher:Roberta SFERRA

1	Course objectives	The goal of this Module is to underline the correlations between the organ shape and its specific function inside the human body. The student should acquire knowledge of intercellular links and their 3D organization to construct different tissues. They should know and recognize the different kinds of human body tissues.The student should acquire knowledge of human body planning, and of systematic and topographic anatomy of human body organs. They should knowmacroscopic anatomyof the organs of locomotor, circulatory,respiratory, digestive, urinary, and reproductive apparatuses.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the modules include: - Humantissue general organization; - histology of the human tissues; - applied anatomy through observation of organs using optical microscopy; - correlations between shape and function of tissues and organs; - detailedanalysisof main organs in addition to a general morphological description; - splanchnology: introduction and generalities to the human body cavities and compartments, Cardiorespiratory apparatus, Digestive apparatus, Urinary apparatus, Reproductive apparatus In the course a more widespread structural approach will be used. On successful completion of this Module the student should: o demonstratea general knowledge of body planning, shape and topography of the main organs in each apparatus, including a comprehensive knowledge of the human body tissues; o acquire knowledge and understanding of cell structure and tissue organization; o demonstrate ability to integrate information acquired from lectures with the microscope observation of histological slides; o apply his competence to describe and recognize cells and tissues of organs using optical microscope.
3	Prerequisites and learning activities	The student must know the basic notions of Cell Biology, Chemistry and Biochemistry as acquired in the high school. The student will attend lectures, prepare of oral/written reports, participate in discussion, prepare and illustrate optical microscopy slidesand 3D images.
4	Teaching methods and language	Lectures, seminars, microscope training and testing, 3D model description. Language: Italian and English Ref. Text books: G. Anastasi et al: *Anatomia Umana* – Edi-Ermes 2011 Netter: *Human AnatomyAtlas* – Elsevier 2012 English books and atlases of human body anatomyare accepted.
5	Assessment methods and criteria	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.

2) MICROANATOMY AND "IN VIVO" IMAGING OF HUMAN ORGANS (2 ECTS)

Teacher: Maria Adelaide CONTINENZA

1	Course objectives	The general objectives of this Module are for students to learn the principles of embryonic development and the theoretical foundations of morphological and functional aspects of human anatomy of the central nervous system, sense organs and the cardiorespiratory, digestive and urogenital apparatus. The course will also introduce the foundations for identifying different anatomical structures through image analysis to allow students to integrate anatomical knowledge into the principal imagingexplorations for clinical diagnosisof organs.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the modules include: - Digestive System: Anatomy of the main organs of digestion. Thesites of digestion and absorption in the gastrointestinal tract. - Cardiovascular System: Anatomy and physiology of blood, the blood vessels, and the heart. Overview of the cardiac cycle and control of the heart beat. - Respiratory System: Anatomy of the respiratory system. Physiology of respiration, transportation and exchange of oxygen and carbon dioxide. Overview of how respiration is controlled, and the effect of exercise on the respiratory system. - Urinary System: Anatomy and physiology of the kidney and its functional units: the nephron.The urinary tracts: the ureters and the urinary bladder - Musculoskeletal System: Outline of the human skeleton and the main muscles of the body. The function of muscle tissue types, characteristics of muscle tissue, types and structures of joints and movements. - Reproductive System: Anatomy and physiology of the male and female reproductive systems to include hormonal control mechanisms. Development of the male and female gametes and pregnancy. As a result of the learning process, the student should be able to: o Apply the appropriate anatomical nomenclature to describe structures and their localization, as well as the medical terminology associated with their respective functions. o Describe the principal stages of development or organogenesis of the different apparatus and systems studied. o Understand the anatomical organization of the organsand deduce the possible alterations to their normal function. o Reproduce and draw cross sections of portions of the studied organsthat have particular clinical relevance. o Recognizethe structures and organs in a virtual 3D cadaver, according to shape and topography, and relate this to knowledge gained from image analysis techniques (Rx, TC, RMN). o Describe the structure, normal patterns of arterial, venous and lymphatic vascularization, innervation andfunction of the apparatus and systems studied.
3	Prerequisites and learning activities	The student must know the basic notions of Cell Biology, Chemistry and Biochemistryacquired in the high school. Students will work towards the planned objectives through Theory classes (the theory programme will be presented systematically, focusing particularly on functional aspects and those elements that require a higher degree of spatial and topographical understanding) and Practical classes (held in Virtual Dissection Room, Microscope room for interpretation of sectional anatomy, Multimedia room for access to programmes that aid understanding of the anatomical structures and functional interrelations studied previously)
4	Teaching methods and language	Lectures, seminars, microscope training and testing, 3D model description. Language: Italian and English Ref. Text books: G. Anastasi et al: *Anatomia Umana* – Edi-Ermes 2011 Netter: *Human AnatomyAtlas* – Elsevier 2012 English books and atlases of human body anatomyare accepted.
5	Assessment methods and criteria	Written tests and oral exam.The student will be assessed on his/her demonstrated ability to discuss the main course contents, using the appropriate scientific terminology.
3) NEUROENDOCRINE SYSTEM MORPHOLOGY AND FUNCTIONAL ORGANIZATION (3 ECTS)		
Teacher: Maria AdelaideCONTINENZA		
1	Course objectives	This Module is based on the outcomes of Module 1 and 2) and has the aim to develop a thorough knowledge of human neuroendocrine systemproviding the student with an understanding of normal human development and how normal development cango wrong, as in commonly observed congenital abnormalities.

2	Course content and Learning outcomes (Dublin descriptors)	Topics of the modules include: Topics of the modules include - Anatomy of Central Nervous System: Introduction and morphogenesis of the nervous system, Organization of the brain, Organization of the encephalic trunk and cerebellum, Organization of the spinal cord. The main nervous pathways. Meninges, cephalorachidian liquid and vascularization, Vegetative nervous system - Esthesiology: Auditory apparatus, Visual apparatus, the smell and taste organs - The Peripheral Nervous System: Physiology of nervous cells and tissue, the spinal cord and spinal nerve, brain and cranial nerves. The senses and sensory receptors. - Endocrine System: Anatomy and physiology of the main endocrine organs. Examples of positive and negative feedback mechanisms, e.g. glucose control. The neuroendocrine control of all organs and systems will be also deeply analyzed. On successful completion of this module the learner will be able to o Identify the different types of nervous pathways found within the body,and the describe the function of each. o Describe the structure and components of the central nervous system o Outline the physiological wayof information processingby the human nervous system and the effects of the diseases. o Explain how the central nervous system contributes to the functioning of the body o Performpracticals and write reports illustrating physiological processes
3	Prerequisites and learning activities	To access this Module the student must know the basic notions of Cell Biology, Chemistry and Biochemistry as acquired in the high school. The learning activities concern attending lectures, preparation of oral/written reports, participation in discussion, optical microscopy slidesand 3D images description.
4	Teaching methods and language	Lectures, seminars, microscope training and testing, 3D model description. **Language:** Italian and English **Ref. Text books:** G. Anastasi et al: ***Anatomia Umana*** – Edi-Ermes 2011 Netter: ***Human AnatomyAtlas*** – Elsevier 2012 English books and atlases of human body anatomyare accepted.
5	Assessment methods and criteria	Written tests and oral exam. The student will be assessed on his/her demonstrated ability to discuss the main course contents, using the appropriate scientific terminology.
4) ANATOMY OF STOMATOGNATHIC APPARATUS (3 ECTS)		
Teacher: **Maria AdelaideCONTINENZA**		
1	Course objectives	This Module aims to provide students with a thorough theoretical knowledge of macroscopic and microscopic organization of cranio-cervico-mandibular complex in order to enable them to assess the dysfunctional aspects and their clinical consequences and to recognize them in altered stomatognathic functions. Special attention will be given to the correlations and links between thestomatognathic apparatus and the remaining systems of the humanbody.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Specificexplanation of stomatognathicapparatus, implemented throughobservation of plastic models, histological slides and of 3D reconstructed images. - Introduction Osseous anatomy: Maxilla & mandible derivation from 1st branchiall arch, Muscles of mastication derivation from mesoderm of 1st branchial arch. - The Mandible major structural parts: condyle, coronoid process, ramus, angle, alveolar process, mental protuberance, muscles attach sites. - The Maxilla: relations with skull, Major intra-oral parts: alveolar process, palatal process, incisive foramen, mid-palatal suture, maxillary tuberosity. - Other bones forming the basic underlying structure of the stomatognathic system: the cheek-bone, palatine, nasal and lacrimal bones, inferior turbinate and the vomer;the portion of the temporal bone of the skull. Articulations of the skull. - The Temporo-mandibular Joint main functional parts: mandibular condyle, mandibular fossa & articular disc. - The Mandibular Fossa: Posterior border squamotympanic fissure-thin bone. Medial wall - temporal bone- steep, Anterior border, the Articular Disc and Condyle/Disc Assembly. - LIGAMENTS: Collateral (Discal) Ligaments, Capsular Ligament, Capsular Ligament Functions, Temporo-mandibular Ligament , Accessory Ligaments. - Joint sufraces and theMandiblemovements.

		- Muscles moving the mandible, upholstered with a vascular, dense, fibrous connective tissue influencing the direction of the mandible's movements.Ligaments limiting the mandible range of motion. - Muscles: Actions of Muscles, Mastication, Masseter, Medial pterygoid, the teeth - Protrusion: Lateral & medial pterygoids. Retraction : Lateral or side to side movement - Tongue: regulation of muscle activity, - Pharynx and hyoid bone, over and under hyoid muscles, Swallowing reflexe and mechanism. - The teeth morphology and their right positions and functions in the chewing function; - The structure of the tooth and its morpho-functional units: pulp-dentin, enamel and parodontal units. - The oral tissues and their microscopic analysis. - The tooth articulation inside the alveolar bone and its movements. - The double teeth development in the long-life ages - Vessels and nerves of the chewing apparatus At the end of this Module the student should: o Have a general understanding of cell structure and tissues, and a precise knowledge of the systems and apparatuses that constitute the human body and of the microscopic anatomy of the organs, o Demonstratea deepknowledge of the muscolo-skeletal shape and functions of the stomatognathic apparatus o know and understandthe complex interrelations between the stomatognathic apparatus and the other body systems o demonstrate ability to explainthe physiological anatomo-functional relationships of the cranio-cervico-mandibular complex and to identify dysmorphic and/or dysfunctional conditions that determine the occurrence of malocclusion or dysfunctional pathologies of the stomatognathic apparatus. o Demonstrate ability to describethe movements of Mandible and the temporo-mandible joint functions; o Be able to analyse the gnato-postural relationships with postural system. o know the endocrine, vascular and nervous correlations of stomatognatic organs. o Know the tooth as a precious unit for the chewing function, and its development
3	Prerequisites and learning activities	Prerequisites The student must know the basic notions of Cell Biology, Chemistry and Biochemistryacquired in the high school. Learning activities Attending lectures, preparation of oral/written reports, participation in discussion, optical microscopy slidesand 3D images description.
4	Teaching methods and language	Lectures, seminars, microscope training and testing, 3D model description. Language: Italian and English Ref. Text books G. Anastasi et al:*Anatomia* Umana – Edi-Ermes 2011 Netter: *Human AnatomyAtlas* – Elsevier 2012 English books and atlases of human body anatomyare accepted.
5	Assessment methods and criteria	Written tests and oral exam.The student will be assessed on his/her demonstrated ability to discuss the main course contents, using the appropriate scientific terminology. During the oral exam the student must be able to demonstrate his/her knowledge of the human neuroendocrine and oral organs and to discuss the links between the shape and the function of tissues and organs of stomatognatic apparatus, also at the optical microscope.

Programme of "BIOCHIMICA" ***"BIOCHEMISTRY"***
This course is developed in two semesters and is composed of three Modules: 1) Introductory Biochemistry, 2) Structure and function of Biomolecules, 3) Metabolism and Biochemistry of oral cavity
D3104, Compulsory **Single Second Cycle Degree in DENTISTRY, 1st year, 1st and 2nd semester**
Number of ECTS credits: 12 (workload is 300 hours; 1 credit = 25hours)

1) INTRODUCTORY BIOCHEMISTRY (6 ECTS)		
Teacher: Valentina QUARESIMA		
1	Course objectives	The goal of this Module is to provide the students with the classical concepts of chemistry (general, inorganic and organic) targeted towards the learning of chemical and biochemical mechanisms that govern life processes.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Structure of the atom and the periodic system. -Chemical bond -States of matter. Solutions and their properties. -Chemical reactions -Thermodynamics -Chemical kinetics -Chemical equilibrium. Equilibria in aqueous solution. -Functional groups and reactivity of organic compounds -Aromatic Compounds -Stereochemistry -Carbohydrates, Lipids, Proteins and Enzymes On successful completion of this module, the student should o Understand the basic chemistry and overall structure of the most important biological macromolecules, and the biological oxidations. o Be able to explore the various ways that biological systems react to their environment. o Understand and explain the meaning of statements related to Biochemistry using appropriate notation and language; o Demonstrate an ability to name and write structures for representative molecules of the major classes of biochemical.
3	Prerequisites and learning activities	The student must know Human Biology and the Basics of Medical Physics
4	Teaching methods and language	Lectures; exercises, tutorials; home work Language:Italian/English Ref. Text books - Binaglia L., Giardina B.: *Chimica e propedeutica biochimica*, Ed. McGraw-Hill, 2006. - Bettelheim F.A., Brown W. H., Campbell M. K., Farrell S. O.*Chimica e Propedeutica Biochimica,* Ed. EdiSES, 2012.
5	Assessment methods and criteria	Written exam.

2) STRUCTURE AND FUNCTION OF BIOMOLECULES (3 ECTS)	
Teacher: Marco FERRARI	
Course objectives	The goal of this Module is to provide the students with: 1) the molecular basis of biological systems and the structure-function relationships of macromolecules; 2) the primary metabolic pathways and their regulation at the molecular, cellular and tissue level.
Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Metabolism of carbohydrates (aerobic and anaerobic glycolysis; Krebs cycle; glycogen metabolism; gluconeogenesis) -Bioenergetics. Electron transport and oxidative phosphorylation. -Lipid metabolism (biosynthesis and catabolism of fatty acids; ketone bodies) -Metabolism of Amino Acids and Proteins (protein turnover and urea cycle) -Hormones. Structure, functions and mechanisms of action On successful completion of this module, the student should o Demonstrate an understanding of the properties of biomolecules and be able to predict behaviour of molecules from structures. o Know the structures of the most important types of biomolecules and their architectural principles o Demonstrate fundamental understanding of the relation between structure and function o Know the different protein classification systems and obtain detailed knowledge of enzymes.
Prerequisites and learning activities	The student must know Human Biology and the Basics of Medical Physics

Teaching methods and language	Lectures; exercises, tutorials; home work Language:Italian/English Ref. Text books - P.M. Champe, R.A. Harvey. D.R. Ferrier. *Le Basi della Biochimica*. Zanichelli, 2007. - D.L. Nelson Michael M. Cox.*Introduzione alla Biochimica di Lehninger*, Zanichelli, 2011.
Assessment methods and criteria	Written exam.
3) METABOLISM AND BIOCHEMISTRY OF ORAL CAVITY (3 ECTS)	
Teacher: Valentina QUARESIMA	
Course objectives	The goal of this Module is to provide the students the composition and the main functions of the tissues and fluids of the mouth.
Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Composition of bone and teeth. Biological apatites -Saliva and its functions -Biochemical basis of caries and periodontal disease -Dental plaque and its metabolism. Stephan curves -Molecular aspects of taste transduction On successful completion of this module, the student should o Acquire profound knowledge of the dental biochemistry by integrating chemical, physiological and pathological evidence of human biochemistry; o Understand and explain the meaning of statements related to Biochemistry of oral cavity using appropriate notation and language; o Know the salivary protein functions and describeindividual components isolated and biochemically characterized.
Prerequisites and learning activities	The student must know Human Biology and the Basics of Medical Physics
Teaching methods and language	Lectures; exercises, tutorials; home work Language:Italian/English Ref. Text books - David B. Ferguson,*Biologia del cavo orale*. Ed. Ambrosiana, 2002. - Martin Levine,*Topics in Dental Biochemistry*. Ed. Springer, 2011.
Assessment methods and criteria	Written exam.

Programme of "BIOLOGIA APPLICATA" ***"APPLIED BIOLOGY"***		
D0260,Compulsory **Single Second Cycle Degree in DENTISTRY, 1st year, 1st semester**		
Number of ECTS credits: 8 (workloads is 200 hours; 1 credit = 25 hours)		
Teacher:Sandra CECCONI		
1	Course objectives	Applied Biology is a foundation course for students who are planning to work in the field of human health. The students will be able to demonstrate understanding of the basic structures and fundamental processes of life at molecular and cellular levels, with detailed knowledge in certain topics. The basic properties of prokaryotic and eukaryotic cells will be described, and the main regulative processes controlling gene expression will be compared. For eukaryotic cells, the principal molecular pathways controlling cell division and apoptosis are discussed. Students will learn also the basic principles of inheritance, by studying the rules of heredity at the level of an organism, sex linked genes and their inheritance, and the main human hereditary diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -DNA organization, replication, repair and transcription; -gene expression; -cell cycle regulation; -mitosis and meiosis; -signal transduction; -apoptosis.

		-Heredity -Human hereditary diseases After successful completion of this module, the student should o have profound knowledge of key regulative processes occurring in prokaryotic and eukaryotic cells o haveknowledge and understanding of the regulation of gene expression and of the principal hormone-dependent molecular pathways. o understand and explain the processes of protein synthesis and secretion, the role and structure of plasma membrane and cytoskeleton. o demonstrate capacity forreading 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 of prokaryotic and eukaryotic cells.
4	Teaching methods and language	Lectures, discussion with students about selected topics Language: Italian Ref. Text Books: -B.Alberts and al.,*Biologia cellulare e molecolare,*Edises, 2009.
5	Assessment methods and criteria	Written or oral exam

Programme of "FISICA" ***"APPLIED PHYSICS"***		
D3384, Compulsory **Single Second Cycle Degree in DENTISTRY, 1st year, 1st semester**		
Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)		
Teacher: Angelo GALANTE		
1	Course objectives	The 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, etc as well as a number of advanced technologies of current use in dental clinical practice like lasers and radiology equipment. 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 o acquireknowledge and understanding of the basic physics principles of nature; o applyknowledge and understanding of the physics principles involved in the functioning of living beings as well as technological instrument of common use in working practice; o demonstrate skill in identifying the physics principles involved their professional activity; o 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: - Halliday D., Resnick R., Walker J.: *Fondamenti di Fisica* , III ed., Casa Editrice Ambrosiana, Milano. - Serway, *Principi di Fisica* , EdiSES S.r.l., Napoli. - D. Scannicchio, *Fisica Biomedica*, 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 "ISTOLOGIA GENERALE ED APPLICATA" ***"GENERAL AND APPLIED HISTOLOGY"*** **The course is composed of two Modules: 1) General and Oral Histology, 2) General and Oral Embriology**		
D3396, Compulsory **Single Second Cycle Degree in DENTISTRY, 1st year, 1st semester**		
Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)		
1) GENERAL AND ORAL HISTOLOGY (4 ECTS)		
Teacher: Bianca Maria ZANI		
1	Course objectives	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. Emphasis will be also placed on the description of specialized tissues and glands present in the oral cavity.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the Module include: - Basic cell biology and histochemistry; - Histology of human tissues; - Applied Histology of oral cavity-associated tissues and glands with particular emphasis of teeth-associated tissues - Developmental patterns, eruption, and exfoliation of teeth. Students are expected to: o acquireknowledge and understandingof cell structure and tissues organization including their embryological derivation 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 with particular emphasis on specialized histology and embryological development of the oro-facial district.
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 : -V. Monesi, *Histology*, Piccin Ed. 2008. -R.H. Ross, *Histology text and atlas*, (Ambrosiana Ed), 2010.
5	Assessment methods and criteria	Oral examination. Students are askedto describe a couple of tissues, their cells and embryonic derivation.
2) GENERAL AND ORAL EMBRIOLOGY (3 ECTS)		
Teacher: Paola DE CESARIS		
1	Course objectives	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 with particular regard on the development of pharyngeal organs.

		The Embryology course will enable students to broadly understand abnormalities in development particularly those of pharyngeal origin.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the General and Oral Embryology Module include: - General Human Embryology and Organogenesis - Applied Embriology of pharynx trait with particular emphasis on teeth development Students are expected to: 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 with particular emphasis on embryological development of the pharynx trait. o be able to **describe** the process of tooth development, eruption and exfoliationand to**differentiate** tooth tissues by origin, formation, composition, components, characteristics, and function. o be able to **describe**the origin, formation, composition, components, characteristics, functions, and clinical considerations of Enamel, Dentin, Pulp, Cementum, Periodontal Ligament, Alveolar Bone, Oral Mucosa, Salivary Glands and Tonsils, o **explain**clinical considerations relating to the tissues in the orofacial region.
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 : -Thomas W. Sadler, *Embriologia medica di Langman*, Elsevier, 5thed., 2013. -K. Moore, T. V. Persaud, M. G. Torchia, *Lo sviluppo prenatale dell'uomo. Embriologia ad orientamento clinico*, Edra Ed., 2014.
5	Assessment methods and criteria	Oral examination. Students are askedto describe a couple of tissues, their cells and embryonic derivation.

Programme of "METODOLOGIA SCIENTIFICA, INFORMATICA E INGLESE" ***"SCIENTIFIC METHODOLOGY, INFORMATICS AND ENGLISH LANGUAGE"*** **The course is composed of three Modules: 1) Medical Statistics, 2), Informatics, 3) English Language and Translation**		
D3402,Compulsory **Single Second Cycle Degree in DENTISTRY, 1st year, 2nd semester**		
Number of ECTS credits: 15 (workload is 175 hours; 1 credit = 25 hours)		
1) MEDICAL STATISTICS (5 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)	Module Contents: -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 strenght 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.

		On successful completion of this module, the student should o have profound knowledge of experimental studies, o haveknowledge and understandingof 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 ccontrol 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* -E. Ballatori, *Foundations of the Scientific Medicine*, Margiacchi-Galeno ed. Perugia, 2006.
5	Assessment methods and criteria	Written and oral exam.
2) INFORMATICS (6 ECTS)		
Teacher: Giuseppe PLACIDI		
1	Course objectives	This Module aims to enable the students 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)	Topics of the module include: -Medical informatics: introduction -The algorithms: definition and properties -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	No prior knowledge of medical informatics is required as a prerequisite.
4	Teaching methods and language	Language: Italian Ref. Text Books: The course material consists, mainly, on lecture notes and slides prepared by the teacher. Some specific journal papers are also given to explore some topics in more details. No textbook is required.
5	Assessment methods and criteria	The exam is written: the student has to give brief answers, in 45 minutes, to four open questions.
3) ENGLISH LANGUAGE AND TRANSLATION(4 ECTS)		
Teacher: to be hired		

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)	Topics of the module include: The main teaching methods of languages and the reading of scientific texts. On successful completion of this module, the student should o be able to read and understand scientific texts; o be able tounderstand a conversationand summarisethe 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	Lectures, Exercises. Language: Italian Ref. Text Books: The course material consists, mainly, on scientific papers and books.
5	Assessment methods and criteria	The exam is a written text following the usual assessment methods.

Programme of: "FISIOLOGIA UMANA E APPLICATA" ***"GENERAL ANDAPPLIED PHYSIOLOGY"*** **This course is developed in two semesters and is composed of two Modules: 1) Human Systems Physiology, 2) Applied Physiology of the Mouth**		
D4053, compulsory **Single Second Cycle Degree in DENTISTRY, 2nd year, 1st and 2nd semester**		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1) HUMAN SYSTEMS PHYSIOLOGY (5 ECTS)		
Teacher: Eugenio SCARNATI		
1	Course objectives	The general objective of this Moduleis the study of the functions of human organs and systems as well as their regulation, coordination and control mechanisms. The student willknow 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 and related Learning Outcomes of this Module are: Unit 1- Introduction of the subjects of systems physiology and homeostasis *Specific conceptual skills and abilities* o To understand the concept of homeostatic regulation and substances interchange Unit 2–Blood: Functions of red blood cells, white blood cells, platelets and lymphocytes. Composition of plasma. Haemostatic machinery. *Specific conceptual skills and abilities* o To understand composition and functions of blood o To understand the functions of plasma proteins o To evaluate the consequences of alterations in haemostatics components. Unit 3 - Excitability and muscle contraction.Neuronal and muscle cells biophysiological properties. Skeletal vs smooth vs cardiac cells physiology. Muscle-nervous system interaction. *Specific conceptual skills and abilities* o To explain the functioning of neuronal cells: action potential, neuronal transmission, synapse o To understand skeletal,cardiac and smooth muscle features and control by the nervous system of the three types of muscle. Unit 4 - Cardiovascular system: The heart and cardiac function. Regulation and control of cardiac function and circulation *Specific conceptual skills and abilities* o To understand the function of the heart, arteries and veins, and the relationships between cardiac output and venous return. o To understand the regulation and control of cardiac function and circulation

		o To understand how the blood pressure is regulated Unit 5 - Nervous system: Motor and sensory functions of the nervous system. *Specific conceptual skills and abilities* o To know the central, peripheral and autonomic functions of the nervous system. o To explain the functioning of different motor and sensory components of the nervous system o To explain how peripheral informations are integrated in the central nervous system o To understand voluntary and involuntary movements To understand the functions of intraoral sensory receptors Unit6 - Digestive system: Structures, secretions and absorption. Structure and metabolic functions of the liver *Specific conceptual skills and abilities* o To understand the anatomical structures involved in food processing and absorption o To know how the various nutrients are modified at the different levels of the digestive tract Unit 7 – Respiration: Functions of lungs and airways, Overview of ventilation physiology and regulation. Oxygen/carbon dioxide transport and non-respiratory functions of lungs. *Specific conceptual skills and abilities* o To know how the structure of the different sections of the respiratory system are involved in breathing o To understand how gasses are transported through respiratory membranes and by the blood. Unit 8 - Renal system: Kidney structure and function; tubular structure and function; solute and water transport. Control of body fluid osmolarity and volume and other homeostatic functions *Specific conceptual skills and abilities* o To understand the anatomical structures involved in fluid excretion. o To understand how the kidneys control body fluid osmolarity and volume, ionic homeostasis and the regulation of acid-base balance o To understand the role of the kidney in the regulation of blood pressure. Unit 9 - Endocrine system: General concepts: glands and hormones.Endocrine regulation of various systems. Neuroendocrine system *Specific conceptual skills and abilities* o To know the glands and hormones involved in endocrine regulation o To understand endocrine regulation of: ionic/osmotic balance, metabolism, growth and development o To understand bone and calcium metabolism
3	Prerequisites and learning activities	This course will introduce organ systems and their functions in man based upon previous knowledge acquired in the courses of Cell and Tissue Biology, Physics Biochemistry and, Anatomy. Thus, the student should be recommended to pass examinations concerning the above mentioned courses before the final examination of the physiology course
4	Teaching methods and language	Language and teaching Methods:Theoretical lectures (in Italian) will consist of scientifically sound and structurally clear presentations on a particular topic in order to address the proper understanding of the concerning information. Explanations will be accompanied by graphical examples, transparencies and interactive slides. In the course of the explanations, some time will be devoted to the discussion of specific points concerning in particular oral physiology. Theoretical lectures will address the study of suggested textbooks and/or recommended specific literature to the student. Specific bibliographic material will be prepared by the professor, and may be made up of selected articles, news, chapters of books, etc., as the professor considers appropriate for every module. Students will be suggested to work on this material previously to the attendance to the corresponding lectures, and the proposed topics will be discussed during course. Suggested textbooks include: -Guyton-Hall,***Fisiologa Medica***, 12 ed. Elsevier Milano, 2012. -Manzoni-Scarnati,***Fisiologia Orale e dell'Apparato Stomatognatico,***EdiErmes Milano 2010
5	Assessment methods and criteria	Final oral examination at the end of the second semester. To evaluate the overall progress made by the student in the course of semesters two multiple-choice tests will be administered. These will include twenty questions to assess the level of understanding of the subject and not just the mere memorization of the data presented in class.
2) APPLIED PHYSIOLOGY OF THE MOUTH (5 ECTS)		
Teacher: Eugenio SCARNATI		

1	Course objectives	The Module general objective is the study of specific aspects of oral physiology, concerning sensory, motor, and secretive functions. The student will understand specific aspects of teeth and mouth physiology in the context of human health, including approaching main and basic devices used for evaluating the physiology of mastication
2	Course content and Learning outcomes (Dublin descriptors)	Topics and related Learning Outcomes of this Module are: Unit 1 - Nervous system: Motor and sensory functions of the nervous system. Oral-facial sensory and motor functions. The trigeminal system. Tooth pulp. Taste and smell. *Specific conceptual skills and abilities* o To explain how peripheral informations are integrated in the central nervous system o To understand voluntary and involuntary movements o To understand the functions of intraoral sensory receptors Unit 2 - Mastication and its control *Specific conceptual skills and abilities* o To know how the mandible moves during masticatory and non masticatory mouth activity o To explain how masticatory forces are modulated o To understand how masticatory muscles are controlled. o To understand the role of the tongue in mastication o To explore the relationships between mandible position and posture o To understand masticatory reflexes Unit 3 - The intraoral fluids and dental deposits *Specific conceptual skills and abilities* o To understand the salivatory glands functions o To know the composition of saliva o To know the role of the crevicular fluid o To know the origin of dental deposits o To understand the functions of the intraoral mucosa Unit 4 - Digestive system: Structures, secretions and absorption. Structure and metabolic functions of the stomatognathic apparatus *Specific conceptual skills and abilities* o To understand of the anatomical structures involved in food processing and absorption o To understandswallowing o To understand how vomit may be evoked by intraoral manipulations o To know how the various nutrients are modified at the different levels of the digestive tract Unit 5 – Respiration: Functions of cranio-facial structure, Overview of ventilation physiology and regulation. *Specific conceptual skills and abilities* o To know how the structure of the different sections of the respiratory system are involved in breathing Unit 6– Phonation: Functions of vocal cords, glottis, larynx, palate, tongue, lips, teeth and cheek in voice production *Specific conceptual skills and abilities* o To understand the process of voice production o To know the organs involved in phonation and articulation.
3	Prerequisites and learning activities	This course will introduce organ systems and their functions in man based upon previous knowledge acquired in the courses of Cell and Tissue Biology, Physics Biochemistry and, Anatomy. Thus, the student should be recommended to pass examinations concerning the above mentioned courses before the final examination of the physiology course
4	Teaching methods and language	Language and teaching Methods:Theoretical lectures (in Italian) will consist of scientifically sound and structurally clear presentations on a particular topic in order to address the proper understanding of the concerning information. Explanations will be accompanied by graphical examples, transparencies and interactive slides. In the course of the explanations, some time will be devoted to the discussion of specific points concerning in particular oral physiology. Theoretical lectures will address the study of suggested textbooks and/or recommended specific literature to the student. Specific bibliographic material will be prepared by the professor, and may be made up of selected articles, news, chapters of books, etc., as the professor considers appropriate for every module. Students will be suggested to work on this material previously to the attendance to the corresponding lectures, and the proposed topics will be discussed during course. Suggested textbooks include:

		-Guyton-Hall, ***Fisiologa Medica***, 12 ed. Elsevier Milano, 2012. -Manzoni-Scarnati,***Fisiologia Orale e dell'Apparato Stomatognatico,***EdiErmes Milano 2010
5	Assessment methods and criteria	Final oral examination at the end of the second semester. To evaluate the overall progress made by the student in the course of semesters two multiple-choice tests will be administered. These will include twenty questions to assess the level of understanding of the subject and not just the mere memorization of the data presented in class.

Programme of "BIOCHIMICA CLINICA E BIOLOGICA MOLECOLARE CLINICA" ***"CLINICAL BIOCHEMISTRY AND CLINICAL MOLECULAR BIOLOGY"***		
D4339, compulsory **Single Second Cycle Degree in DENTISTRY, 2nd year, 1st semester**		
Number of ECTS credits: 3 (total workload is 75 hours; 1 credit = 25 hours)		
Teacher: Gianfranco AMICOSANTE		
1	Course objectives	This course applies biochemical and molecular principles to select, evaluate and interpret tests used for the diagnosis and monitoring of diseases in humans. Fundamentals of biochemistry will be introduced as well, before discussing the diagnostic value of the markers. The student should be able to identify any significant alteration of the most common biochemical markers and to correlate them to diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Course contents: -Introduction to Laboratory Medicine. The role of Clinical Biochemistry and Clinical Molecular Biology. Basic Principles of clinical chemistry, quality control, reference intervals, diagnostic efficacy and data interpretation. -Hydroelectrolytic balance. Water and electrolytes, extracellular fluid. Oncotic and osmotic pressure of blood. -Blood gases, pH and Buffer system. Acid, bases and buffer definitions, acid-base balance, assessment of acid-base homeostasis. -Renal Function. Fundamentals of renal anatomy and physiology, hormonal regulation and renal function evaluation. Clearance, tubular function evaluation. Fundamentals of pathophysiology. -Lipids and lipoproteins. Lipid chemistry, lipoprotein physiology and metabolism. Atherogenesis, diseases prevention and diagnosis. -Plasma proteins and enzymes. Aminoacids and proteins structure. Electroforetic profile and interpretation. Function of plasma proteins and diagnostic significance. Clinical enzymology in cardiac and liver function. -Carbohydrates. General description of carbohydrates, hormonal control of glycemia, hyperglycemia and hypoglycemia. Differential diagnosis and monitoring of diabetic disease. -Therapeutic Drug Monitoring. Routes of administration, adsorption, free vs bound drugs, drug distribution, drug elimination, pharmacokinetics. Some of TDM examples (cardioactive drugs, antibiotics, antiepilectic and psycoactive drugs, antineoplastics). On successful completion of this module, the student should o have basic knowledge of biochemical processes and their alteration in diseases; o haveknowledge and understanding the role of pathogenic markers in differential diagnosis; o develop skill in applying quantitative methods to describe, evaluate and model biological processes; o be able to correctly use devices for the collection, treatment and storage of biological samples; o demonstrate capacity todevelop diagnostic products for Clinical Biochemistry; o be able to critically and quantitatively analyze scientific data.
3	Prerequisites and learning activities	Fundamentals in chemistry and biochemistry
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: -Federici G."*Medicina di laboratorio*", McGrow-Hill, 2008.
5	Assessment methods and criteria	Written and oral exam

Programme of "PATOLOGIA GENERALE ED IMMUNOLOGIA"
"GENERAL PATHOLOGY AND IMMUNOLOGY"

This course is composed of two Modules: 1) General Pathology, 2) Immunology

D1758, Compulsory

Single Second Cycle Degree in DENTISTRY, 2nd year, 1st semester

Number of ECTS credits: 7 (total workload is 175 hours; 1 credit = 25 hours)

1) GENERAL PATHOLOGY (4 ECTS)

Teacher: Maria Grazia CIFONE

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 diseaseand of the responses to biological damage.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -General Pathology: -Alterations of cellular homeostasis -General etiology -Inflammation -Vascular, endothelial and emodynamic physiopathology -Angina pectoris -Stroke -Anemia -Neoplasia -Vascular diseases -Hepatic diseases On successful completion of this module, the student should o have profound knowledge of biological processes; o haveknowledge 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	Lectures and team work Language: Italian and English Ref. Text Books: -Kumar V., Abbas A.K., , Fausto N., Aster J.C., *Robbins e Cotran, Le basi patologiche delle malattie, Patologia generale,* Elsevier Masson, 2010. -E. Rubin, F. Gorstein, R. Rubin, R. Schwarting, D. Strayer, *Patologia*, Casa Editrice Ambrosiana, 2006. -A. Stevens, J. Lowe, I. Scott, *Patologia*, Casa Editrice Ambrosiana, 2009. -G.M.Pontieri, M.A. Russo, L. Frati, *Patologia generale*, PICCIN, 2010.
5	Assessment methods and criteria	Written and Oral exam

2) IMMUNOLOGY (3 ECTS)

Teacher: Maria Grazia CIFONE

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)	Topics of the module include: -Organization of the immune system -B- cell and T-cell receptors -Antigens -Natural Killer cells

		On successful completion of this module the student should have the knowledge and skills to: 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 Applydiagnostic 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	Lectures and team work Language: Italian and English Ref. Text Books: -Kumar V., Abbas A.K., , Fausto N., Aster J.C., *Robbins e Cotran, Le basi patologiche delle malattie, Patologia generale,* Elsevier Masson, 2010. -E. Rubin, F. Gorstein, R. Rubin, R. Schwarting, D. Strayer, *Patologia*, Casa Editrice Ambrosiana, 2006. -A. Stevens, J. Lowe, I. Scott, *Patologia*, Casa Editrice Ambrosiana, 2009. -G.M. Pontieri, M.A. Russo, L. Frati, *Patologia generale*, PICCIN, 2010.
5	Assessment methods and criteria	Written and Oral exam

Programme of "IGIENE E MICROBIOLOGIA" ***"HYGIENE AND MICROBIOLOGY"*** **This course is composed of two Modules: 1) General and Applied Hygiene, 2) Microbiology and Clinical Microbiology**		
D3454, Compulsory **Single Second Cycle Degree in DENTISTRY, 2nd year, 2nd semesterr**		
Number of ECTS credits: 14 (workload is 350 hours; 1 credit = 25 hours)		
1) GENERAL AND APPLIED HYGIENE (7 ECTS)		
Teacher: Leila FABIANI		
1	Course objectives	Aim of this course is to provide the students with knowledge and capacity to understand the basic methodology and tools for 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 and prevention strategies both at individual and collective level, and to plan interventions for health and safety promotion of health care workers and users.
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 design a prevention strategy; o is able to apply and use the acquired knowledge; o understand scientific publication and is able to up-date his methods.
3	Prerequisites and learning activities	No prerequisites are needed
4	Teaching methods and language	Lectures, team work, exercises, home work, reports. 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
2) MICROBIOLOGY AND CLINIC MICROBIOLOGY (7 ECTS)		
Teacher:Remo BARNABEI		
1	Course objectives	The course is intended to give the fundaments of general microbiology, with particular reference to the oral cavity casualties. 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)	Topics of the module include: -Fundaments of procariotic cell structure and function -Cell wall structure -Laboratory equipment in bacteriology -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 On successful completion of this module, the student should o have profound knowledge of the relevance of bacteria and viruses, o haveknowledge 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 casualities, 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	Lectures Language:Italian Ref. Text books: P.R. Murray, K.S. Rosenthal, M.A. Pfaller, *Medical Microbiology,* EMSI 2008.

Programme of "PRINCIPI DI ODONTOIATRIA PREVENTIVA E DI COMUNITÀ" ***"FOUNDATIONS OF PREVENTIVE AND COMMUNITY DENTISTRY"*** **This course is composed of 5 Modules: 1) Clinical Odontostomatology propaedeutics, 2) Clinical Odontostomatology Traineeship, 3) Preventive and Community Dentistry, 4) Preventive and Community Dentistry Traineeship, 5) Dental Hygiene**		
D3430, Compulsory **Single Second Cycle Degree in DENTISTRY, 2nd year, 2nd semester**		
Number of ECTS credits: 5 (workload is 125 hours; 1 credit = 25 hours)		
1***) CLINICAL ONDOSTOMATOLOGY PROPEDEUTICS (5 ECTS)***		
Teacher: Luigi DI FABIO		
1	Course objectives	To introduce odontostomatological terminology, illustrate the fields of interest and the most common problem areas in Dentistry and give an outline of the most widely encountered dental pathologies.

2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Common pathologies of the stomatognathic apparatus - The medical record: personal particulars and anamnesis - The normal objectivity of the stomatognathic apparatus - Semeiology and clinical examination - The dental surgery: odontology and team management - Dental ergonomics - The basic and revolving instrumentary - Tooth decay - Isolation of the operating field: the dental dam - Elements of diagnostics for images: X-rays and endoral x-rays - Instrumental diagnosis: OPT, TELERX, TC dentalscan, Cone Beam, Sialography, etc. - Specific ATM semeiology - Case study, taking dental impressions and study models - Endoral photography - The parodontium and the periodontal disease: the periodontal record and the survey - Sterilization and instruments maintenance - Medical evaluation of the dental patient: the patients at risk - The emergency in the dental surgery: BLS-BLS-D - The urgent dentistry in clinical practice - Basics of oral hygiene and motivation - Periodontal instruments: sharpening of courettes and scalers - The orofacial pain: an outline of anaesthesiology - Wound edges and sutures - An outline of implantology and guided tissue regeneration - Evidence-Based Dentistry At the end of the course the student should Have acquired the methodological and propaedeutical instruments to rationally manage the relationship with the patient, Knowthe semeiology and the general clinical and special odontostomatological examination in addition to basic first aid notions (BLS-BLSD). Know and understand the practical use of materials, the range of dental instruments, the isolation of the operation field, the correct disinfection and sterilization protocols, Know the dental ergonomics and is able to manage the dental unit, Know and applythe most widely employed semeiological and diagnostic methodologies in Odontostomatology.
3	Prerequisites and learning activities	The student must know the basic notions of the courses of the 1st year.
4	Teaching methods and language	Classroom lectures and slides presentation Language: Italian Ref. Text books: -Wilkins Esther M., *La Pratica Clinica dell'igienista dentale*, Piccin Nuova Libraria, 2010. -Guastamacchia P., Ardizzone V.,*Le radiografie*; Elsevier Masson Editore, 2002. -Rodella L., Tschabitscher M., Mezzani R., Labanca M ,*Anatomia chirurgica per gli odontoiatri,*Esra, 2008. -Tani Botticelli Antonella,*Imparando dall'esperienza - Testo Atlante di Igiene orale + CD- Rom;* Edizioni Ariminum Odontologica, 2008. -V. Ardizzone Cortesi, *L'assistenza nello studio odontoiatrico* , Elsevier Masson Editore, 2006. -F. Caruso e Coll. , *Parodontologia* , Bologna – Editrice Martina 2011. -*Odontoiatria Restaurativa* – Accademia Italiana di Conservativa –Masson Esra 2009. Louis F.Rose,*Periodontics: Medicine Surgery and Implants*,Elsevier 2004. O.A.C. Ibsen – J.A. Phelan –,*Patologia Orale*, ed: U.Romeo , P. Vesvovi, A Del Vecchio, CIC International 2012. - Falcioni S., Pejrone C., *Manuale Atlante di disinfezione e sterilizzazione in Odontoiatria,*Ed: Martina, Bologna 2003.
5	Assessment methods and criteria	Oral exam

2) CLINICAL ONDOSTOMATOLOGY PROPEDEUTICS TRAINEESHIP (2 ECTS)		
Teacher: Luigi DI FABIO		
1	Course objectives	This Module is taught by field training during attendance of the student in the department and provides the students with the practical skills and abilities needed in their professional life. They will learn how to make a diagnosis and to apply prevention and therapy methods of several diseases, traumatic injuries and anomalies.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -epidemiology, etiology and prevention of major diseases of dental interest. -diagnosisand therapy of main diseases, -traumatic injuries, -anomalies of tooth structure congenital and acquired, with particular attention to the use of materials and the application of the latest techniques of restorative dentistry At the end of the traineeship, the student should o have profound knowledge of the main diseases of the dental district, o haveknowledge and understanding of the essential elements of Conservative / Restorative techniques in Dentistry, in view of the epidemiological pathology of caries, traumatic injuries, anomalies of tooth structure, o Be able to apply the knowledge and understanding for the identification of disease risk and theimplementation of the appropriate treatment as suggested by the most recent guidelines at national and international level.
3	Prerequisites and learning activities	The student must know the main pathologies.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: -Wilkins Esther M.,*La Pratica Clinica dell'igienista dentale*, Piccin Nuova Libraria2010.
5	Assessment methods and criteria	Test, practical demonstrations.
3) PREVENTIVE AND COMMUNITY DENTISTRY (3 ECTS)		
Teacher: Maria Chiara MARCI		
1	Course objectives	To know and to applypreventive strategies in dentistry and in community dentistry (particularly in the field of paediatrics: prevention in caries, malocclusions, dental trauma)
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Brief overview of scientific terminology, teeth and dental arches anatomy and morphology, dental tissues histology and embryologic derivation, physiology and chronology of tooth eruption, aetio-pathogenesis of dental trauma, basics of cariology; -Definition of community dentistry -Guidelines of caries prevention, guidelines of orthodontics prevention, guidelines of dental trauma prevention On successful completion of this module, the student should - have profound knowledge of the meaning of "good health", of the concept of prevention in the field of Medicine and Dentistry; of concept of community in dentistry, of dental and oral pathologies and their consequences; - haveknowledge and understanding of risk factors in determining pathologies such as caries, anomalies such as malocclusions, dental trauma; - understand and explain strategies to define and outcome an action plane in dentistry prevention (i.e. in school community); -understandgoals of prevention; - demonstrate skill in using appropriate materials and methods in prevention and ability to recognise different types of dental pathologies such as referred in topics of this module; - demonstrate capacity for reading and understand other texts on related topics; - have capacity to apply PREVENTION STRATEGIES TARGETED TARGETED ON COMMUNITIES AT RISK OF SPECIFIC PATHOLOGIES -analyse different risk of pathologies; -be able to evaluate different and various consequences in consideringof specific dental and oral pathologies

3	Prerequisites and learning activities	The student must know Anatomy, histology and embryology.
4	Teaching methods and language	Lectures, team work, exercises, home work, report, vision and understanding of radiologic slides about caries lesions… Language: Italian Ref: Text Books: -Strohmenger, Ferro, *"Odontoiatria di Comunità - dalla prevenzione della carie alla promozione della salute orale"*, Ed. Masson, 2003. -Fonzi L.,*"Anatomia funzionale e clinica dello splancnocranio"*, Edi. Ermes (Martina), 2000. -RouletJ.F., Degrange M.*, "Odontoiatria adesiva - una rivoluzione silenziosa"* Masson, 2002. -Sturdevant-Roberson,*"Odontoiatria Conservativa - Arte e Scienza"* Piccin, 2004 . -Andreasen-Andreasen,*"Le lesioni traumatiche dei denti"*,Edi Ermes (Martina), 1992. -M. Tsukiboshi, "*Il trattamento dei traumi dentari"*, Scienza e Tecnica Dentistica 2000. -Caprioglio D., Manna A.,Paglia L.,*"Manuale di traumatologia dentoalveolare*" Novartis, 1996. - "*Guidelines in orthodontic prevention*" on various text books of Orthodontics
5	Assessment methods and criteria	Oral Exam
4) PREVENTIVE AND COMMUNITY DENTISTRY TRAINEESHIP (2 ECTS)		
Teacher: Maria Chiara Marci		
1	Course objectives	This Module aims to provide the students with practical experience on issues presented in the theoretical part. The student will start to build on the knowledge acquired during the fists academic years.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Practical exercises related to dental equipment in use in the dental practice: main features and functions, maintenance, sterilization; -Tutorials on how to organize the agenda in the dental practice: from the first examination to how to fill in medical records; -Practice relating to the instrument for the first examination and welcome of the patient in the dental practice; -How to perform an intraoral radiography The student will o Acquire practical knowledge related to the basic knowledge of the dental equipments, their maintenance and sterilization; o Capture the main concepts for the reception of the patient in the dental practice and the management of appointments and medical records; o Know how to organize the first visit, o Know how to make an intraoral radiography.
3	Prerequisites and learning activities	The student must know teeth and dental arches anatomy and morphology, dental tissues histology and embryologic derivation and physiology and chronology of tooth eruption, aetio-pathogenesis of dental trauma, basics of cariology
4	Teaching methods and language	Practical tutorials, tests Language: Italian Ref. Books Text: -Leghissa GC- Moretti S-Palerma C-Buzzi G., *La gestione pratica del paziente odontoiatrico. Protocolli, linee guida, norme.*, Elsevier Masson 2007. Cortesi Ardizzone V.,*L'assistenza nello studio odontoiatrico. Manuale pratico.*, Masson 2006.
5	Assessment methods and criteria	Practical tests
5) DENTAL HYGIENE		
Teacher: Mario GIANNONI		
1	Course objectives	Aim of the course is to give to the students a valid knowledge of the main techniques that the professional Dentist should use for preventing or manage oral diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include Prevention Programs of -Periodontitis, -Dental Caries,

		-Cross Infection Dental, -Malocclusions, -Oral cancer, -Halitosis, -Dental erosion, -Oral Diseases in pregnancy, -General principles of radioprotection in dentistry. On completion of this module the student should: o haveknowledge of the techniques and methods for the oral hygiene; o be able to discuss the prevention methodologies and identify those that best fit with the specific patient; o understand and explain the different methodologies to be applied in different contexts and needs; o beable to apply the guidelines; o demonstratecapacity to interpret and adapt the theoretical knowledge to practical cases; o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy and histology of oral cavities.
4	Teaching methods and language	Oral Lessons, Seminars. Language: Italian Ref. Text Books: -Wilkins E.,*" La pratica clinica dell'igienista dentale*", Piccin, 2010.
5	Assessment methods and criteria	Oral Exam

Programme of "DIAGNOSTICA DI LABORATORIO" ***"LABORATORY DIAGNOSTICS"*** **This course is composed of two Modules: 1) Pathological Anatomy, 2) Clinical Pathology**		
D3346, Compulsory **Single Second Cycle Degree in DENTISTRY, 3rd year, 1st semester**		
Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)		
1) PATHOLOGICAL ANATOMY(6 ECTS)		
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 especially those of the head and neck region. The students will get to know the role of pathology in diagnostics of various non-oncological and oncological processes by using morphologic techniques (biopsies, surgical material and autopsies).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of this Module include: -Myocardial infarction -Hepatitis -Oral pathology -Cirrhosis of the liver -Glomerulonephritis -Tuberculosis -Pneumonia -Stroke On successful completion of this module, the student should o haveacquiredknowledgeof microscopic diagnostics of general pathologic processes and clinical practice in the study of macroscopic lesions of organs, o demonstrateknowledge and understanding of anatomic and pathological elements, o understand and explain the morphogenesis of the most common 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 generalpathology, physiology, anatomy and oral pathology.
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text Books: Robbins & Cotran,*"Pathologic basis of disease" (Le basi patologiche selle malattie),* Kumar, Abbas, Fausto editors, 7th Edition, Elsevier, Philadelphia, 2004.
5	Assessment methods and criteria	Oral exam
2) CLINIC PATHOLOGY (3 ECTS)		
Teacher:Remo BARNABEI		
1	Course objectives	Thecourseisdesignedtoprovidethestudentwiththebasicknowledgeabouttheclinicalutilityofquantitative/qualitativelaboratoryanalysis(ofbiologicalspecimens,suchasbloodandurine)inthediagnosis,treatmentand/orpreventionofsomediseases. Onsuccessfulcompletionofthismodule,thestudentshouldlearnthegenerallogic oftheinterpretationoflaboratorydataandhow touse it in a clinicalreasoning.
2	Course content and Learning outcomes (Dublin descriptors)	Topicsofthemodule include: -INTRODUCTION:LABORATORY MEDICINEAND CLINICALDIAGNOSIS. -METHODS:E.L.I.S.A.,FlowCytometry,Electrophoresis -HEMATOLOGY: INTERPRETING LABORATORY TESTS ✓ *Erythrocytes*:Morphologyanderythrocyteindices.RBCcount.Hemoglobin.Dysmorphic ✓ erythrocytes: related disease. ✓ *Anemias:*Definition,Pathophysiologicalandmorphologicalclassification,GeneralManifestations, ✓ Laboratory tests and diagnostic significance. ✓ *Leukocytes*:morphologyandfunction.WBCdifferentialcount.'Quantitativeleukocytedisorders': ✓ laboratorytestin clinical diagnosis. ✓ *Hemostasis:*Physiologichemostasisandcoagulationproteinsystem,Testforevaluationof platelet ✓ function,coagulationprocess,fibrinolyticprocess:diagnosticsignificance.Antithrombin,D-Dimer,ProteinC,ProteinS,ActivatedProteinCResistance:laboratorytestsanddiagnosticsignificance.Laboratory evaluationofPlateletand Coagulation disorders. ✓ *Plasmaproteins*: diagnostic significance. -TUMOR MARKERS:definition, functionalclassificationcutoff.Theidealtumormarkerandactualclinicalapplications.Individualtumormarkers:clinicalapplication. -BIOCHEMICAL MARKERS OF MYOCARDIAL DAMAGE:diagnosticvalueinearlyandlatedetectionof acute myocardialdamage. -BASIC EXAMINATION OF URINE:basic urinalysis andclinicaldiagnosis. On successful completion of this module, the student should: o have profoundknowledgeof the general logic of the interpretation of laboratory data. o haveabasicknowledgeandunderstandingofthecontributionofhematologytestsin supportingdiagnosis,treatment,preventionofsomepathologiesandoftheclinicalapplication of some biomarkers. o demonstrateskillinthelogical/rationalevaluationofthelaboratorydataandabilitytoindividuatethepotentiality and/or the limits of laboratory tests. o acquirecommunicationskills and adequate terminology in the discipline. o demonstratecapacity to readand understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the basic notionsof -the fundamental pathogenetic and pathophysiological mechanisms underlying diseases

		-ClinicalBiochemistry.
4	Teaching methods and language	Lectures Language:Italian Ref.Textbooks: -Antonozzi E.,Gulletta*'Medicina di laboratorio:Logicaepatologiaclinica'*, PICCIN 2013. -Laposata*,'Medicinadilaboratorio:Ladiagnosidimalattianellaboratorioclinico'*Ed.italian aa curadiR.Verna,PICCIN2012. -Giorgio Federici,*'Medicina di Laboratorio'*,McGrawHill, 2008. FORADDITIONALINFORMATION: -JohnBernardHenry,*Diagnosiclinicaemetodidilaboratorio,*AntonioDelfinoEditore,or *-Henry'sClinicalDiagnosisandManagementbyLaboratoryMethods*, 22e by Richard A. McPhersonMD.
5	Assessment methods and criteria	Written exam.

Programme of "FARMACOLOGIA" ***"PHARMACOLOGY"***		
D0488, Compulsory **Single Second Cycle Degree in DENTISTRY, 3rd year, 1stsemester**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
Teacher: Donatella FANINI		
1	Course objectives	Our course in Pharmacology is designed to prepare the student for the clinical study of therapeutics by providing a knowledge of the manner in which drugs modify biological function. The course includes a systematic study of the effects of drugs on different organ systems and disease processes, the mechanisms by which drugs produce their therapeutic and toxic effects, and the factors influencing their absorption, distribution and biological actions.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Principles of Pharmacology, Dose-Response Relationships, Pharmacokinetics, Drug Interactions, Drug Metabolism, Receptors, ADR. Pharmacogenetics. - Fluoride in Human Body. - Structure and Function of the Nervous System, Autonomic Pharmacology: introduction, Cholinergic Pharmacology, Adrenergic Pharmacology, Dopamine and 5HT Pharmacology, Autacoids, Glutamate, GABA, Neuropeptides and Other Neurotransmitters, Pain Pathways and NSAIDS, Opiates, Glucocorticoids, Local Anesthetic Drugs, General Anesthetic Drugs, Histamine & Antihistamines, Drugs of Abuse: CNS Stimulants, CNS Depressants, Antiemetic and Gastro-protector Drugs, Drugs Affecting Haemostasis. - Antimicrobials, Antifungal, Antiviral. On successful completion of this module, the student should o understand and explain how drugs modify biological functions. o demonstrate skill in making informed judgments and choices on the effect of drugs on different organs and diseases, in the analysis of their pharmacokinetic and pharmacodynamic profile, of their potential toxic effects and ability to apply their knowledge. o demonstrate capacity forreading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know Biochemistry, Physiology and Pathology.
4	Teaching methods and language	Language:Italian Ref. Text books: -M. Amico-Roxas, A.P. Caputi, M. Del Tacca: *Farmacologia in odontoiatria*, UTET, 2003. -H.P. Rang, M.M. Dale, j.M. Ritter, P.K. Moore: *Farmacologia*, Casa Editrice Ambrosiana, 2004.
5	Assessment methods and criteria	Oral exam

Programme of "MATERIALI DENTALI E TECNOLOGIE PROTESICHE"
"DENTAL MATERIALS AND PROSTHETIC TECHNOLOGIES"

This course is composed of four Modules: 1) Dental Materials, 2) Dental Materials Traineeship, 3) Prosthetic and Lab Technologies I, 4) Prosthetic and Lab Technologies I Traineeship

D3464, Compulsory
Single Second Cycle Degree in DENTISTRY, 2nd year, 2nd semester

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

1) *DENTAL MATERIALS (5 ECTS)*

Teacher: Maurizio DORONI

1	Course objectives	This Module aims to give to the student the basic knowledge and competence for a proper use of dental materials. the student will understand the physical and chemical laws governing the biomaterials and know the correct employ of biomaterials in every dental treatment.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Main general physics and mechanical concepts: Hooke's law, single and couple of forces. Physics characters of bodies. Metallic alloys and their chemical physical characters. -Impression Materials: Physical, chemical and clinical characters of the main impression materials. -Cements and Glass-Hyonomerics Materials: Physical, chemical and clinical characters of the cements and glass hyonomers. -Polymeris: Physical, chemical and clinical characters of the polymers. -Materials in Orthodontics: A short history of orthodontic materials. Brackets and bands. Different techniques: friction and frictionless appliances, continuous and segmented techniques. -Composites and Resins: Physical, chemical and clinical characters of the composites and resins. -Adhesion: Different physics and chemical mechanisms of adhesion. -Ceramics: Physical, chemical and clinical characters of ceramics in dentistry. On successful completion of this module, the student should o have profound knowledge of physical and chemical properties of dental materials, o haveknowledge and understanding of right use of dental materials, o understand and explain the biocompatibility of dental materials, o demonstrate skill and ability in the correct use of dental materials, o demonstrate capacity for reading and understand other texts for a continuous knowledge up-dating.
3	Prerequisites and learning activities	The student must know oral pathology and y have good knowledge of chemistry and physics
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: -Simionato F*., **Scienza dei materiali dentari***, ed. Piccin,1995.
5	Assessment methods and criteria	Oral exam

2) DENTAL MATERIALS TRAINEESHIP (2 ECTS)

Teacher: Maurizio DORONI

1	Course objectives	This Module is taught by field training during attendance of the student in the department and provides the students with the practical skills and abilities needed in their professional life. They will have a direct experience on physical behaviour of the most common dental materials and will learn how to identify and correctly use the appropriate ones in several professional situations.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Practical exercises related to dental materials in use in the dentistry practice: motivation and goals, preparation and application; -Tutorials on how to select and manipulate dental materials (Orthodontic stainless steel wires forces and moments. Experiments on impression materials. Composite resins dimensional variations. Blue light polymerization); -Practice relating to the biomaterials safety in the dentists' work . At the end of the traineeship, the student should

		o have profound knowledge of the main dental materials and of their application, o haveknowledge and understanding of the science that underpins the biomaterials used by the dentists, o be competent at the correct selection and manipulation of dental biomaterials, o haveknowledge of the limitations of such dental biomaterials
3	Prerequisites and learning activities	The student must know the main oral pathologies.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: -Simionato F*., **Scienza dei materiali dentari***, ed. Piccin,1995.
5	Assessment methods and criteria	Test, practical demonstrations.
3) PROSTHETIC AND LAB TECHNOLOGIES I (5 ECTS)		
Teacher:Massimo FRASCARIA		
1	Course objectives	The course aims at providing advanced knowledge about materials and technologies used in prosthetic dentistry .
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Basic principles and technology concerning prosthetic procedures and devices, -Traditional and CAD/CAM laboratory procedures -Traditional and Digital impression techniques -Prosthetic materials and their clinical use -Zirconia: clinical and laboratory procedures -CAD/CAM technologies in implant dentistry On successful completion of this module, the student should: o have profound knowledge of prosthetic materials, o haveknowledge and understanding of clinical and laboratory prosthetic procedure, o demonstrate skill to distinguish the use of prosthetic devices and ability to choose a rehabilitation plan in different clinical cases o understand and explain clinical and laboratory manufacturing steps of prosthetic devices o demonstrate capacity for reading and understand other texts on related topics for a continuous knowledge up-dating.
3	Prerequisites and learning activities	The student must know the physiology of the stomatognathic system and the basic characteristics of dental materials
4	Teaching methods and language	Lectures Language: Italian Ref. Text books: -"Materiali e tecnologie protesiche" (AutoriVari), ARIES 2, 2011. -Simionato F*., **Scienza dei materiali dentari***, ed. Piccin,1995.
5	Assessment methods and criteria	ORAL EXAM
4) PROSTHETIC AND LAB TECHNOLOGIES I TRAINEESHIP (3 ECTS)		
Teacher: Massimo FRASCARIA		
1	Course objectives	This Module aims to provide the students with practical experience on issues presented in the Module.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Practical exercises related to prosthesis in use in the dentistry practice: motivation and goals, preparation and application; -Tutorials on how to assess the patients' needs and select the technology to be used; -Practice relating to the preparation and application of prosthesis. At the end of the traineeship, the student should o have profound knowledge of the main prosthetic technologies and of their application, o haveknowledge and understanding of the science that underpins the biomaterials used by the dentists, o be competent at the correct selection and manipulation of prosthesis, o haveknowledge of the range of application and limitations of such technologies.

3	Prerequisites and learning activities	The student must know
4	Teaching methods and language	Practical tutorials, tests Language: Italian Ref. Books Texts: -Simionato F*., **Scienza dei materiali dentari***, ed. Piccin,1995.
5	Assessment methods and criteria	Practical tests

Programme of "PATOLOGIA SPECIALE ODONTOSTOMATOLOGICA" ***"SPECIAL ODONTOSTOMATOLOGICAL PATHOLOGY"*** **This course is composed of two Modules both developed in two Semesters: 1) Special Odontostomatological Pathology, 2) Special Odontostomatological Pathology Traineeship.**		
D3142, Compulsory **Single Second Cycle Degree in DENTISTRY, 3rd year, 1st and 2nd semester**		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1***) SPECIAL ODONTOSTOMATHOLOGIC PATHOLOGY (6 ECTS)***		
Teacher:Mario CAPOGRECO		
1	Course objectives	The Module aims to provide the students with -an overview of the main diseases of the oral cavity with particular attention to the etiopathogenesis, -knowledge and understanding of the approach to the patient in oral medicine, in order to be able to make a clinical diagnosis -skills and abilities to apply innovative techniques and appropriate diagnostic protocols.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Clinical elements of oral disease: ✓ clinical and histopathological features of the physiological lesions and pathological diseases of the soft tissues of the oral cavity, of the teeth, jaw bones and perioral tissues, ✓ main clinical and histopathological diagnostic procedures, ✓ rational diagnostic path of oral diseases, ✓ differential diagnosis of oral diseases and their correlation with systemic diseases and drug-related pathologies, -Prevention ✓ early detection of potentially malignant lesions of the oral cavity and their prevention, ✓ radiological and/or laboratory examinations for preventive, diagnostic, therapeutic and prognostic aims. At the end of this Module the student will o knowthe physiological lesions and pathological diseases of the soft tissues of the oral cavity, of the teeth, jaw bones and perioral tissues, both from the clinical and histopathological point of view. o be able to critically observe the oral lesions andmake differential diagnosisof oral diseases, o know the basic elements of the main clinical and histopathological diagnostic procedures. o be able toperform a rational diagnostic path of oral diseases. o be able to make early detection of potentially malignant lesions. o understand how to prescribe and evaluate radiological and/or laboratory examinations for diagnostic, therapeutic and prognostic aims.
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian and scientific English Ref. Text Books: -J. V. Soames, J. C. Southam, *Patologia Orale*, EMSI 3° edizione, 2005.
5	Assessment methods and criteria	Oral exam

2) SPECIAL ODONTOSTOMATHOLOGIC PATHOLOGY TRAINEESHIP (4 ECTS)		
Teacher: Mario CAPOGRECO		
1	Course objectives	This Module is strictly connected with Module 1) and is the practical application of the theoretical issues contained in Module 1) and constitutes an integral part of it.It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make a diagnosis and to apply prevention and therapy methods of several diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - approach to the patient in oral medicine: clinical examination of the oral cavity, filling of patient's medical record for a correct clinical diagnosis, - correct preparation of a report, - correct communication to the patient about diagnosis and treatment, - discussion on diagnostic tests and interpretation, - assessment of a patient and treatment plan identification, - discussion of clinical cases with particular attention to the differential diagnostic processes. On completion of this Module the student will o have profound knowledge of diagnosys and clinical practice o haveknowledge and understanding of treatment in oral diseases, o understand and explain oral pathology and preventive dentistry, o demonstrate capacity to use of databases to be up to date in oral medicine, o understandthe importance of a correct filling of patient's medical record with appropriate medical history and systemic diseases, o be able to write a correct and complete report of the observed disease, o be able to properlycommunicate the observed diseases, o be able to interact with colleagues, o be able toperform a correct examination of the patient's mouth for differential diagnosis in oral medicine, o know and understand the most useful diagnostic tools in oral medicine, acquire skills for the implementation of the basic maneuvers for inspection, palpation and diagnosis of the main diseases of the oral cavity, o acquire the ability to perform a diagnostic test with the help of special instruments (pads, needle aspiration, biopsy)
3	Prerequisites and learning activities	The student must know the main pathologies.
4	Teaching methods and language	Tutorials, practical exercises Language: Italian Ref. Text Books: -J. V. Soames, J. C. Southam, *Patologia Orale*, EMSI 3° edizione, 2005.
5	Assessment methods and criteria	Test, practical demonstrations.

Programme of "DIAGNOSTICA PER IMMAGINI E RADIOTERAPIA" ***"DIAGNOSTIC IMAGING AND RADIOTHERAPY"*** **This course is composed of two Modules: 1) Diagnostic Imaging and Radiotherapy, 2) Diagnostic Imaging and Radiotherapy Traineeship.**		
D4353, Compulsory **Single Second Cycle Degree in DENTISTRY, 3rd year, 2nd semester**		
Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)		
1) DIAGNOSTIC IMAGING AND RADIOTHERAPY(6 ECTS)		
Teacher: Alessandra SPLENDIANI		
1	Course objectives	The goal of this course is to make students able to perform and interpret radiological examinations of the major dental diseases. will also provide information on the diagnostic potential of the advanced techniques of MRI and CT, and the bases of radiation protection.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Introduction to diagnostic techniques. X-ray tube. X-ray image - computed Tomography TC-Dentalscan - Magnetic Resonance Functional magnetic resonance imaging

		- Principles of radiation protection - Radiological anatomy of the teeth - Dental X-rays: intraoral method - Dental radiology: extraoral method - Dental anomalies and degenerative - Tooth decay - The parodontal desease - maxillary cyst - odontogenic tumors - non-odontogenic tumors - X-ray and CT studies of the TMJ - MRI studies of the TMJ - MRI anatomy of the cranial nerves - Cone Bean CT - Statement of radioprotection in dentistry On successful completion of this module, the student should - have profound knowledge of Dental radiology - haveknowledge and understanding of radiological appearance of dental pathology, - understand and explain all dental diagnostic techniques, - understand principal pathological radiological signs, - demonstrate skill in radiology and ability to perform dental x-ray, - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know anatomy of dental structures and notions of elementary physics.
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text books: - Rotondo A. et Al., *ODONTOIATRIA. Diagnostica per Immagini*, Idelson-Gnocchi, 2008.
5	Assessment methods and criteria	Oral exam
2) DIAGNOSTIC IMAGING AND RADIOTHERAPY TRAINEESHIP (2 ECTS)		
Teacher: Alessandra SPLENDIANI		
1	Course objectives	This Module is strictly connected with Module 1), is the practical application of the theoretical concepts and constitutes an integral part of it. It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make and interpret X-ray and resonance of the oro-maxillo district.
2	Course content and Learning outcomes (Dublin descriptors)	The course consists of: -Presentation and discussion of clinical cases through the interpretation of images, -Practical exercises on methodologies and techniques for imaging and radiotherapy, -Correct use of equipment and principles of safety. At the end of the Modules 1) and 2) the student will be able to o Interpret images, o Make a diagnosis through the analysis of images, o Use the correct methods for radiation protection of patients and medical team, o Know the correct use and the limits of technologies.
3	Prerequisites and learning activities	The student must know anatomy of dental structures and notions of elementary physics.
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text books: - Rotondo A. et Al., *ODONTOIATRIA. Diagnostica per Immagini*, Idelson-Gnocchi, 2008.

Programme of "SCIENZE MEDICHE I" ***"MEDICAL SCIENCES I"***
This course is composed of four Modules: 1) Cardiovascular Diseases I, 2) Cardiovascular Diseases II, 3) Endocrinology, 4) Internal Medicine
D3514, Compulsory

Single Second Cycle Degree in DENTISTRY,3rd year, 2nd semester		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1) CARDIOVASCULAR DISEASES I (2ECTS)		
Teacher:Maria PENCO		
1	Course objectives	The goal of this course is to provide the knowledge of pathophysiology, symptoms and clinical presentation of the main cardiovascular disease, the risk of dental procedures in cardiac patients, the management of cardiovascular drugs in the dental setting. On successful completion of this module, the student should understand the clinical findings of a cardiac patients, their risk profile and management in dental setting.
2	Course content and Learning outcomes (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, endocarditis, cardiac arrest and cardiorespiratory resuscitation, antiplatelet and anticoagulant therapies. On successful completion of this module, the student should - have profound knowledge of basic symptoms in cardiac patients, - haveknowledge and understanding of pathophysiology of the main cardiovascular diseases, - understand and explain the risk profile of patients with cardiac diseases -understand hazards and contraindications to dental 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 management of cardiac patient pre-, during and post- a dental procedure.
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: -S.Dalla Volta, "*Malattie del cuore e dei vasi* " McGraw Hill Libri Italia, 2005. -W.J.Hurst,*"Il cuore"*, McGraw Hill Libri Italia, 1986. -Harrison,*"Principi di medicina Interna",* McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral Exam
2) CARDIOVASCULAR DISEASES II (1 ECTS)		
Teacher:Silvio ROMANO		
1	Course objectives	The goal of this course is to provide thestudents with knowledge and skills for a correct approach to dental care of patients with cardiovascular disease. They will learn how to recognize the symptoms and how to be prepared for emergencies.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Properly assessment of the patient: medications the patient is taking along with the dose and timing and potential drug interactions and side effects. - Premedication for anxiety reduction. -local anesthesia and the guidelines for the administration of epinephrine -patients with angina pectoris and supply of nitroglycerin - Preparations for emergencies and institution of emergency measures. On successful completion of this module, the student should o Know how to provide dental care to patients who had Heart Attack, o Know how to provide dental care to patients with high blood pressure , o Know and understand the drug interaction (specially with local anesthesia products), o Recognize the symptoms and effects of Chest Pain and Stroke, o Know and understand the connections between heart disease and oral health, o Recognize how oral health can provide warning signs for other diseases or conditions, including heart disease.
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: -S.Dalla Volta, "*Malattie del cuore e dei vasi* " McGraw Hill Libri Italia, 2005. -W.J.Hurst,*"Il cuore"*, McGraw Hill Libri Italia, 1986. -Harrison,*"Principi di medicina Interna",* McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam
3) ENDOCRINOLOGY(4 ECTS)		
Teacher: Felice FRANCAVILLA		
1	Course objectives	The goal of this Module 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)	Topics of the course 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 On successful completion of this module, the student should: o Acquire profound knowledgeof etiology, physiopathology and clinical picture of the main endocrine and metabolic pathologies; o Acquire knowledge and understanding of their diagnostic approach and treatment options; 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 pathologies; o Understand and explain the meaning of statements using appropriate notation and language; o Demonstrate capacity to continue learning by understanding 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	Lectures; seminars; team work; exercises, tutorials; home work Language:Italian Ref. Text books: -Harrison,*"Principi di medicina Interna",* McGraw Hill Libri Italia, 2012. -F. Camanni e E. Ghigo*, "Malattie del sistema endocrino e del metabolismo",* Edi. Ermes, 2012.
5	Assessment methods and criteria	Oral exam.
4) INTERNAL MEDICINE(4 ECTS)		
Teacher: Giovambattista DESIDERI		
1	Course objectives	The course aims to give students of Dentistry a basic but accurate formation on most relevant diseases of internal medicine expertise, with particular attention to the with special attention to those more interesting and more frequently encountered in clinical dentistry practice. It also provides a practical field training in the Department for the achievement of an autonomous capacity for diagnostic approach to the patient.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Major diseases -Pathology -Endocrinology -Cardiovascular pathology

		-Pathophysiological, clinical and diagnostic aspect of internal medicine diseases,with some general therapeutic information. On successful completion of this module, the student should - have profound knowledge of the most relevant diseases of cardiovascular, respiratory, gastrointestinal and urinary systems, blood disorders and infectious diseases, - haveknowledge and understanding of the main clinical manifestations of the above described diseases, - understand and explain the symptoms that could be referred and/or signs that could be presented by the patients during the clinical practice, - demonstrate skill in therapy and ability to manage acute clinical conditions that can occurduring the clinical practice, - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	No prerequisites are requested
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text books: -Harrison,*"Principi di medicina Interna",* McGraw Hill Libri Italia, 2012.
5	Assessment methods and criteria	Oral exam

Programme of "SCIENZE MEDICHE II" ***"MEDICAL SCIENCES II"*** **This course is composed of three Modules: 1) Skin and venereal diseases, 2) Blood Disorders, 3) Infectious diseases**		
D3528, Compulsory **Single Second Cycle Degree in DENTISTRY, 3rd year, 2nd semester**		
Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)		
1***) SKIN AND VENEREAL DISEASES (3 ECTS)***		
Teacher: Carlo DI STANISLAO		
1	Course objectives	The Module aims to give an overviewon the roleof the skinas an organforlightconditionsand general stomatoiatric interest
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Elementary lesions -Anatomy and physiology of the skin -Bacterial diseases -Mycosis -Virosis -Angiomas -Burns -Aphtosis -Oral psoriasis -Oral allergy -Lichen ruber planus -Precancerosis -Neoplasia On successful completion of this module, the student should o have profound knowledge of cutaneous manifestations of systemic diseases in patients of all ages (with particular reference to oro-facial district), o know and understand dermatological therapy, o acquireclinical skills required to diagnose cutaneous disease (skin, mucous membranes and appendages) including physical examination and pertinent investigative procedures, o be able to formulate an appropriate differential and provisional diagnosis, o describeand discuss (with special emphasis on oro-facial district): ✓ the clinical features, including presenting signs and symptoms, morphologic features, and prognosis, for inflammatory, traumatic, vascular, infectious, neoplastic, infiltrative, degenerative and genetic disorders of the skin, ✓ Histopathology of the skin in health and disease,

		✓ Function and dysfunction of the immune system as it relates to skin disease, ✓ Normal phases and mechanisms of wound healing, o applylifelong learning skills to maintain and enhance professional competence o demonstrate insight into his/her own limitations of expertise and seek appropriate consultation from other health professionals.
3	Prerequisites and learning activities	Basic knowledge ofgeneralphysiologicalandbiological elements
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text books: A. Ribuffo,*Manuale di Dermatologia,*Lombardo Ed. 1987.
5	Assessment methods and criteria	Oral exam
2) BLOOD DISORDERS (3 ECTS)		
Teacher: Mauro DI IANNI		
1	Course objectives	Aim of this Module is to give an overviewon the roleof hematologicdeceasesforlightconditionsand general stomatoiatric interest.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Normal Hemostasis, Laboratory Assessment of Hemostasis - Common Bleeding Disorders - Blood Vessel Wall Abnormalities - Platelet Related Bleeding Disorders - Thrombocytopenia - Thrombocytopathy - Coagulation Factor Disorders - Inherited Coagulation Disorders - Patient and Clinical Assessment - Treatment Planning Considerations On successful completion of this module, the student should o haveknowledge ofthe primary haemostatic components of blood, o haveknowledge and understandingof the basic physiology of hemostasis, o be able to list and briefly describe the three phases of hemostasis and the common bleeding disorders (genetic, acquired and or medication-induced), o be able to describe and discuss the pathophysiology of common bleeding disorders, o know and listthe frequently prescribed and OTC drugs that cause anticoagulation effects (anti-platelet and anti-thrombotic effects) on the haemostatic system, o know and list the common blood laboratory tests to diagnose and evaluate common bleeding disorders, o become familiar with interpretation of common blood laboratory tests (normal and abnormal values) used in the dental office, o discuss the medical / dental management strategies for patients with bleeding disorders, o discuss treatment plans (assessment, diagnosis, plan, implementation and evaluation) that provide safety and comfort for managing patients with bleeding disorders in the dental environment, o list and describe hemostatic agents (local and systemic) to prevent and or reduce the clinical bleed in patients with bleeding disorders during and after invasive dental procedures. o gain knowledge about the current evidence-based recommendations for the purpose of managing patients with disorders of coagulation while providing invasive dental procedures.
3	Prerequisites and learning activities	Basic knowledge of general physiological and biological elements
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: -S. Tura,*Lezioni di Ematologia,*Società Editrice Esculapio, Bologna 2003. -Harrison,*"Principi di medicina Interna",* McGraw Hill Libri Italia, 2012.

5	Assessment methods and criteria	Oral exam
3) INFECIOUS DISEASES (3 ECTS)		
Teacher: Antonio CELLINI		
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 dentist care correct approach in serious cases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Diagnosis and management of human viral hepatitis, Tuberculosis, HIV Disease, -Prions and the human transmissible spongiform encephalopathies, -Update on herpesvirus infections, -Viruses and neoplastic growth, -Waterborne pathogens and dental pathologies, -Oral infections and systemic diseases On successful completion of this module, the student should o Know the high risks for a dentist 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 (tubercolosis, 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, team work and clinical practice Language: Italian Ref. Text Books: -G. Filice, *Malattie Infettive,*Mc Graw Hill, 1994. -M. Moroni, R. Esposito, F. De Lalla, *Malattie infettive,* Masson 1989.
5	Assessment methods and criteria	Oral exam

Programme of "CHIRURGIA ORALE I" ***"ORAL SURGERY I"*** **This course is composed of two Modules: 1) Oral Surgery I, 2) Oral Surgery I Traineeship.**		
D4361, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1st and 2nd semester**		
Number of ECTS credits: 5 (total workload is 100 hours; 1 credit = 25 hours)		
1) ORAL SURGERY I (4 ECTS)		
Teacher: Claudia MAGGIORE		
1	Course objectives	The aim of the course is to provide sufficient evidence for a good diagnosis and treatment of oral diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Extraction of teeth & retained roots/pathology -Management of associated complications including oro-antral fistula -Management of odontogenic and all other oral infections -Management of complications -Peri-radicular surgery

		-Dentoalveolar surgery in relation to orthodontic treatment - Appropriate pain and anxiety control including the administration of standard conscious sedation techniques -Management of adults and children as in-patients, including the medically at risk patient -Clinical diagnosis of oral cancer and potentially malignant diseases, -The diagnosis of dentofacial deformity and familiarity with its management and treatment -Diagnosis of oral mucosal diseases and familiarity with their management and appropriate treatment -Control of cross-infection -Medico-legal aspects of oral surgery On successful completion of this module students will be expected to gain knowledge of the scientific basis of the clinical speciality as well as the principles of oral disease diagnosis and patient management summarised as follows: o Knowledge of anatomy, physiology, development and pathology of the teeth and supporting tissues, the jaws and orofacial tissues, applied surgical anatomy of perioral structures, o knowledge of the cranial nerves and understanding ofa correlation between anatomy and clinical examination, o knowledge and understanding of applied pathology of oral mucosal lesions, odontogenic tumours, cysts of the jaws and related soft tissue lesions, o identificationof oral premalignancy and malignancy o recognitionof oral microbial disease o knowledge of properties of relevant biomaterials and application of anaesthesia, analgesia and sedation, o capacity to managemedical emergencies and the unconscious patient, o knowledgeof pharmacology of the main agents encountered in the practice of dentoalveolar surgery, including drugs being taken by patients and those which may be prescribed in the practice of oral surgery.
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	Lectures, team work and clinical practice. Language:Italian Ref. Text Books: G. F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.
5	Assessment methods and criteria	Oral Exam
2) ORAL SURGERY I TRAINEESHIP (1 ECTS)		
Teacher: Claudia MAGGIORE		
1	Course objectives	This Module is the practical application of the theoretical concepts and constitutes an integral part, of Module 1). It provides the students with the practical skills and abilities needed in their professional life. They will learn how to makeperform the basic surgical interventions and become able to make diagnosis and plan the correct surgical treatment.
2	Course content and Learning outcomes (Dublin descriptors)	The course consists of: -Presentation and discussion of clinical cases through practical examples, -Practical exercises on methodologies and techniques for performing basic surgery, -Correct use of equipment and tools. At the end of the Modules 1) and 2) the student will be able to o Make a diagnosis, o Plan a surgical treatment through theclinical examination, o Use the correct methods and tools for performing oral surgery, o Know the correct use and the limits of technologies.
3	Prerequisites and learning activities	The student must know anatomy of dental structures and notions of correlations within oro-facial structures..
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text books: -G.F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.

Programme of "NEUROLOGIA, PSICHIATRIA E PSICOLOGIA" ***"NEUROLOGY, PSYCHIATRICS AND PSYCHOLOGY"*** **This course is composed of two Modules: 1) Skin and venereal diseases, 2) Blood Disorders, 3) Infectious diseases**		
D3552, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1st semester**		
Number of ECTS credits: 6 (total workload is 150 hours; 1 credit = 25 hours)		
1) NEUROLOGY (3 ECTS)		
Teacher: Carmine MARINI		
1	Course objectives	The course is aimed to provide the student with the basic knowledge and understanding of neurological diseases relevant to the Dentistry practice and be able to make the appropriate decisions in case of neurological emergencies
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Semiology of motor functions. -Semiology of sensory functions. -Semiology of cranial nerves. -Sleep and wake cycles. -Cognitive functions. -Epilepsy. - Headache and facial pain. -Demyelination disorders. -Extrapyramidal disorders. -Cerebrovascular disorders. Dementias. On successful completion of this module, the student should o **Understand** that patients with neurological disease require special management considerations, o **Know and understand** the Neurologic conditions they can face: abnormalities associated with the cranial nerves, facial sensory loss, facial paralysis, epilepsy, Parkinson disease, multiple sclerosis, stroke, and myasthenia gravis, o **Explain**strategies for managing patients with some of the neurologicaldiseases, o **Know**the correct interpretation of neurological signs and symptoms, especially involving cranial nerves, and **understand**the major groups of neurological disorders. o Understand and explain epidemiological, clinical, pathophysiological, prognostic and therapeutic aspects.
3	Prerequisites and learning activities	The student must know anatomy and physiology of the central nervous system
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text books: Lenzi G, Di Piero V, Padovani A.,*Compendio di Neurologia*, Piccin Ed., 2013.
5	Assessment methods and criteria	Oral exam
2) PSYCHIATRY (3 ECTS)		
Teacher: Alessandro ROSSI		
1	Course objectives	Aim of this Module is to give an overviewon the main psychiatric symptoms that can occur in the dentistry practice.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -anxiety, insomnia, depression, palpitations, paresthesiae, children abdominal pain, -post-traumatic disorders, alcohol and drug misuse, -pharmacology and interaction of drugs, -psychosis, -dental care treatment of patients with psychiatric diseases, On successful completion of this module, the student should o haveknowledge of the main psychiatric diseases, o haveknowledge and understanding of the methods and protocols for the treatment of these patients, o become familiar with interpretation of symptoms and with treatment methods in the dental office,

		o discuss the medical / dental management strategies for patients with mental disorders, o discuss treatment plans (assessment, diagnosis, plan, implementation and evaluation) that provide safety and comfort for managing patients with mental disorders in the dental environment, o gain knowledge about the current evidence-based recommendations for the purpose of managing patients with mental disorders while providing invasive dental procedures.
3	Prerequisites and learning activities	Basic knowledge of general neurology.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text Books: M.Biondi, B. Carpiniello, G. Muscettola, G. F. Placidi, A. Rossi, S. Scarone, *Manuale di Psichiatria*, Elsevier Masson, 2009.
5	Assessment methods and criteria	Oral exam

Programme of "SCIENZE CHIRURGICHE" ***"SURGICAL SCIENCES "*** **This course is composed of five Modules: 1) Anesthesiology and emergency treatment, 2) Anesthesiology and emergency treatment traineeship, 3) general Surgery, 4) Plastic Surgery, 5) Plastic Surgery traineeship.**		
D3560, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1st semester**		
Number of ECTS credits: 15 (total workload is 375 hours; 1 credit = 25 hours)		
1***) ANAESTHESIOLOGY AND EMERGENCY TREATMENT(6 ECTS)***		
Teacher:Franco MARINANGELI		
1	Course objectives	Acquiring knowledge and understanding about medical and surgical emergencies and their treatment. Acquiring knowledge and understanding about technical anesthesia
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Elements of the history of anesthesia -The preoperative evaluation -Induction and tracheal intubation -Maintenance and awakening from anesthesia -Monitoring preoperative -Loco-regional anesthesia: definition and pathophysiology -Toxicity of local anesthetics -Physiopathology of pain -Local anesthetics -Nsaids -Opioids -Cardioactive drugs -Treatment of acute respiratory failure -Cardiopulmonary arrest On successful completion of this module, the student should o have profound knowledge of drugs and chemistry, o haveknowledge and understanding therapeutic elements, o understand and explain techniques of regional anesthesia, the appropriate drugs, and the recognition and management of complications, o demonstrate skills and capacities in the approach of patientsand abilityto start treating patients for medical emergencies arising during dental procedures, o be able tosuggest or prescribe adequate postoperative analgesia, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	Basic knowledge ofgeneralphysiologicalandbiological elements
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italian Ref. Text books:

		-Miller R.D. ,*Anesthesia,* Elsevier, 20109. -Marino P.L., *Terapia Intensiva*, Elsevier Masson, 2007.
5	Assessment methods and criteria	Oral exam
2) ANAESTHESIOLOGY AND EMERGENCY TREATMENTTRAINEESHIP (2 ECTS)		
Teacher: Franco MARINANGELI		
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 assess vital parameters, to obtain situational awareness and to startemergency medical treatment: bag-mask ventilation, venous access, chest compressions.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Protocols for the treatment of emergencies, - Apnea and respiratory failure, - Emergency drugs: preparation and administration - Anaesthetics in Dentistry: preparation and administration, On successful completion of this module, the students should o be able to prepare their dental office team for emergencies with a detailed plan of action, o be able to use the training experience for handling airway emergencies in the dental office setting, o know how to use emergency breathing circuits, capnography, stethoscopy, and other essential elements of sedation emergency management, o be able to recognise apnea and respiratory failure, to begin bag-mask ventilation; o have capacity to evaluate and improve their technique to obtain adequate ventilation. o know how to palpate central pulses and measure arterial blood pressure,be able to measure peripheral arterial oxygen saturation and perform chest compressions. o be able to prepare and administer emergency drugs: obtaining venous access, atropine, epinephrine, beta agonists. o be able to prepare and administer infusions of analgesics through a venous line.
3	Prerequisites and learning activities	Basic knowledge of Pharmacology.
4	Teaching methods and language	Team work and clinical practice Language: Italian Ref. Text books: -Miller R.D. ,*Anesthesia,* Elsevier, 20109. -Marino P.L., *Terapia Intensiva*, Elsevier Masson, 2007.
5	Assessment methods and criteria	Oral exam and practical test.
3) GENERAL SURGERY (4 ECTS)		
Teacher:Marco CLEMENTI		
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)	Topics of the module include: -The breast ✓ Anatomy ✓ Breast development and physiology ✓ Diagnosis of the breast disease ✓ Benign breast tumors and related diseases ✓ Malignant tumor of the breast -The thyroid gland ✓ Anatomy and physiology ✓ Diagnosis of the thyroid diseases ✓ Thyroiditis ✓ Nodular goiter, benign and malignant neoplasms

		-The esophagus ✓ Anatomy and physiology ✓ Diagnosis of the esophagus diseases ✓ Diverticula of the esophagus ✓ Disorders of the esophageal motility ✓ Hiatal harnia and gastroesophageal reflux disease ✓ Tumors of the esophagus -The stomach ✓ Anatomy and physiology ✓ Diagnosis of the stomach diseases ✓ Acute and chronic gastritis ✓ Peptic ulcer disease ✓ Adenocarcinoma of the stomach -The Colon and rectum ✓ 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 ✓ Clinical consideration and diagnosis of the acute abdomen ✓ Peritonitis ✓ Acute obstruction of the GI tract. On successful completion of this module, the student should o Acquire knowledge and understandingof general surgery principles, 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 andapply 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 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: -*SabinstonTextbook of Surgery*, 19th Edition, Elsevier, 2012.
5	Assessment methods and criteria	Oral exam
4) 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 aesthetic medicine in Dentistry.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Biology of scaring -Wounds and mechanisms of tissue repair -Chronic wounds -Scars -Malignant skin tumors -Congenital malformations -Laser surgery -Aesthetic Surgery and Medicine in Dentistry On successful completion of this module, the student should o haveknowledge of diagnosys and clinical practice, o haveknowledge and understanding pathological elements, o Acquire knowledge of Normal wound healing, Risk factors for delayed wound healing, Principles and methods of wound closure, including suture types and suture selection, o demonstrate skill in aesthetic surgery and ability to recognize difficult scars ,

		o Have competencies in Basic suturing, Basic knot-tying, Basic dressing application, o Be able to identify infection in a wound and tissue necrosis.
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: -M. Giuliani,*Lezioni di Chirurgia Plastica*, Ed. Gran Sasso, 2006.
5	Assessment methods and criteria	Oral exam
5) PLASTIC SURGERY TRAINEESHIP (1 ECTS)		
Teacher: Maurizio GIULIANI		
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 Aesthetic Surgery.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Treatment of scars, - Care of infectious wounds, - Basic suturing, - Malformations. On successful completion of this module, the student should o Learn the techniques of gentle tissue management in skin closure, trauma (burns), flap rotation and skin grafting, o Acquire basic knowledge of congenital facial and extremity birth defects, o Acquire basic knowledge of reconstruction after oncologic procedures of head and neck cancers.
3	Prerequisites and learning activities	The student must know pathology and physiology
4	Teaching methods and language	Team work and clinical practice Language: Italian and English Ref. Text Books: -M. Giuliani,*Lezioni di Chirurgia Plastica*, Ed. Gran Sasso, 2006.
5	Assessment methods and criteria	Oral exam

Programme of "MEDICINA LEGALE" ***"FORENSIC MEDICINE"***		
D4360, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1st semester**		
Number of ECTS credits: 3 (total workload is 75 hours; 1 credit = 25 hours)		
Teacher:Mauro ARCANGELI		
1	Course objectives	The course addresses those aspects of forensic medicine and science which are most frequently the subject of expert testimony in the courts. The aim is to provide students with core knowledge and intellectual skills in forensic medicine.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -The forensic medicine as a meeting point between medicine and law. Causation. -Nods of thanatology and pathology. The death's accertainment. -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, legal nature, 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. -Psychic causality -Material causality -Definition of eligibility

		-Capacity of discernment -Informed consent -The report After completing this course the successful candidate will: o Have a knowledge and understanding of forensic medicine principles, concepts and terminology, o Have an understanding of related applications of forensic science, o Be able to apply their knowledge and skills to accurately observe and document medico-legal findings, o Be able to develop and critique medico-legal opinions based upon current literature.
3	Prerequisites and learning activities	No prerequisites are required. The student must know how to manage in difficult situations relating to the subject and he must be able to understand, analyse and solve the problems that may arise in the professional life.
4	Teaching methods and language	Lectures, Language: Italian Ref. Text books: -T. Feola – M. Arcangeli – E. Nardecchia, *Appunti di Medicina Legale,* Minerva Medica, febbraio 2014. -L. Macchiarelli – P. Arbarello – N.M. Di Luca – T. Feola, *Medicina Legale,* Minerva Medica 2005. -P. Arbarello – T. Feola – M. Arcangeli – M. Vaccaro, *Medicina legale per le professionisanitarie. Diritto. Deontologia. Legislazione sociale,* Minerva Medica 2010 -Norelli G.A., Buccelli C., Fineschi V., *Medicina Legale edelle Assicurazioni,* Piccin Ed. 2009 .
5	Assessment methods and criteria	Oral exam

Programme of "ORTOGNATODONZIA" ***"ORTHODONTICS AND GNATHOLOGY"*** **This course is developed in two Semesters and is composed of four Modules: 1) Orthodontics, 2) Orthodontics Traineeship, 3) Gnathology, 4) Gnathology Traineeship**		
D3592, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1st and 2nd semester**		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1***) ORTHODONTICS (5 ECTS)***		
Teacher: Claudio CHIMENTI		
1	Course objectives	Theobjective of thisModule is to give the student all the information necessary to provide a complete and correct cephalometric diagnosis on both lateral and posterior-anterior projection radiographs, through lectures and practical training. The final learning Outcomes are: full autonomy of the student in the conduct cephalometric analysis, interpretation of the results of the cephalometric data and formulation of cephalometric diagnosis, which will be added to all diagnostic records needed for making the diagnosis in Orthodontics.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Cephalometric Analysis in lateral and posterior-anterior projections. Theory and practice. -Introduction to methods and techniques for diagnosis of oral and maxillofacial region, medical management of the patient with complex disorders involving the oral mucosa and salivary glands as well as orofacial pain and temporomandibular disorders. -Production and interpretation of images and data produced by all modalities of radiant energy that are used for the diagnosis and management of diseases, disorders and conditions of the oral and maxillofacial region. On successful completion of this module, the student should o have profound knowledge of cephalometry on both lateral and posterior-anterior projection radiographs, o haveknowledge and understanding of cephalometry parameters and their interpretation o understand and explain the cephalometric data, o demonstrate skill in the interpretation of cephalometric data and ability to make a

		cephalometric diagnosis, o demonstrate capacity for reading and understand other texts on related topics about cephalometry and other diagnostic methods.
3	Prerequisites and learning activities	The student must know basic knowledge of anatomy, pathological anatomy, general pathology, microbiology, radiology, histology, physiology and biochemistry,physics special oral pathology, oral surgery, general surgery, endodontics, periodontology, maxillo facial surgery and otolaryngology. The Module provide a practical training with cephalometric analysis made by hand of the posterior-anterior and lateral radiographs in the classroom and clinical practice in the department.
4	Teaching methods and language	Lectures with ppt presentations and classroom exercises, team work, home work Language: Italian and English Ref. Text book: -Michel Langlade, *"Orthodontic Cephalometry",* Scienza e Tecnica Dentistica, 1979.
5	Assessment methods and criteria	Qualifying exam with practical test of Cephalometric Analysis made by hand on lateral and posterior-anterior X-rays.
2) ORTHODONTICS TRAINEESHIP(1 ECTS)		
Teacher:Claudio CHIMENTI		
1	Course objectives	This Module provide the students with practical application of theoretical concepts learnt in Module 1). They will attend practical sessions in the Department and will learn how to produce and interpret data.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Discussion of clinical cases -Use of equipment and production of data -Treatment Planning Considerations On successful completion of this module, the student should o apply cephalometric data to make cephalometric diagnosis o analyze cephalometric data o evaluate cephalometric data for diagnosis.
3	Prerequisites and learning activities	The student must know basic knowledge of anatomy, pathological anatomy, general pathology, microbiology, radiology, histology, physiology and biochemistry,physics special oral pathology, oral surgery, general surgery, endodontics, periodontology, maxillo facial surgery and otolaryngology. The Module provide a clinical practice with cephalometric analysis made by hand of the posterior-anterior and lateral radiographs in the department.
4	Teaching methods and language	Team work, practical experience Language: Italian and English Ref. Text book: -Michel Langlade, *"Orthodontic Cephalometry",* Scienza e Tecnica Dentistica, 1979.
5	Assessment methods and criteria	Practical test of Cephalometric Analysis made by hand on lateral and posterior-anterior X-rays together with the Oral exam on the theoretical part.
3) GNATOLOGY (3 ECTS)		
Teacher:Annalisa MONACO		
1	Course objectives	To give the student the knowledge of internationally validated methods to diagnose and treat the temporomandibular disorders (TMDs).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Anatomy of stomathognatic system -Temporomandibular disorders etiology -Classification of temporomandibular disorders -Prevention -Clinical management of dysfunctional patient -RDC axis/I and axis II -Electromyography and kinesiography -TENS -Occlusal Rehabilitation On successful completion of this module, the student should o have profound knowledge of anatomy of stomathognatic system, neuromuscular and

		autonomic system, o have acquiredknowledge and understanding of diagnosis and therapy of Temporo-mandibular disorders, o understand and explain the need of a combined study of the muscles of the face, jaw, neck and shoulders for an optimal dental treatment of occlusion, o be able to apply objective measurement of known physiologic phenomenon to better deliver an occlusal result that is optimally synergistic for teeth,temporomandibular joints and masticatory muscle function and stability o demonstrate skill in gnathology and temporo-mandibular disorders and ability to make diagnosis and treatment plan o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know human anatomy, physiology and neuroanatomy
4	Teaching methods and language	Lectures, presentation, exercitation, team work and clinical practice Language: Italianand Scientific English Ref. Text Books: - R. Cattaneo, A. Monaco, *Elettromiografia di Superficie e Chinesiografia computerizzata del sistema stomatognatico,* San Benedetto del Tronto (2007),FUTURA PUBLISHING - R. Cattaneo, A. Monaco, *Il sistema trigeminale*,San Benedetto del Tronto (2006),FUTURA PUBLISHING
5	Assessment methods and criteria	Written and oral exam, electromyography and Kinesiology study on patient e short report.
4) GNATOLOGYTRAINEESHIP(1 ECTS)		
Teacher:Annalisa MONACO		
1	Course objectives	This Module aims to give the students practical experience of the theoretical concepts learnt in Module 3) of which constitutes an integral part.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -measurement of shift or change in jaw position due to malformation, dental restorative treatment, orthodontics and/or TMJ treatment, -application of *gnathologic principles* as well as *neuromuscular principles* to address more *complex bite problems* that relate to TMJ,comprehensive restorative procedures and orthodontics, -practical demonstration of technological advancements of jaw tracking, -discussion of clinical cases. On completion of this traineeship the successful students should o Understand and properly use electromyography for the analysis of muscle tonus and status of the masticatory system, o Be able to measure and analysepostural responses of abnormal occlusion relating to TMD occlusal therapy,restorative/prosthetic dentistry and or orthodontic dentistry, o recognizes and values the use of computerized mandibular scanning (CMS) and low frequency Myomonitor TENS as well as electromyography (EMG), for a combined and more complete perspective of occlusal (gnathologic) management,to better understand the patient's jaw,cervical postural and muscle activity conditions, o be able to make a precise diagnosis and design an appropriate treatment plan.
3	Prerequisites and learning activities	Basic knowledge of human anatomy, physiology and neuroanatomy.
4	Teaching methods and language	Lectures, team work and clinical practice Language: Italianand Scientific English Ref. Text Books: - R. Cattaneo, A. Monaco, *Elettromiografia di Superficie e Chinesiografia computerizzata del sistema stomatognatico,* San Benedetto del Tronto (2007),FUTURA PUBLISHING - R. Cattaneo, A. Monaco, *Il sistema trigeminale*,San Benedetto del Tronto (2006),FUTURA PUBLISHING
5	Assessment methods and criteria	Performing electromyography and Kinesiology study on patient e short report.

Programme of "CARIOLOGIA E ODONTOIATRIA CONSERVATIVA"

"CARIOLOGY AND CONSERVATIVE DENTISTRY" **This course is composed of three Modules: 1) Skin and venereal diseases, 2) Blood Disorders, 3) Infectious diseases**		
D3584, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 2nd semester**		
Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)		
1) CONSERVATIVE DENTISTRY (4 ECTS)		
Teacher:Maria Chiara MARCI		
1	Course objectives	The Module aims to give the students information and skills enabling them -to know and manage modern concepts of Cariology (etiology, micro-biology, pathogenetic mechanism of dental caries, classification of caries lesions, prevention and early interception of carious lesions); -to examine radiographic intra-oral slides for carious lesions detection(site and level of progression), for caries risk evaluation and for treatment planning in Conservative dentistry.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Aetio-pathogenesis, physiopathology, diagnosis and classification of carious lesions (site and staging), -Preventive and treatment planning in patients with high caries risk and/or carious lesions; -Surgical instruments, conservative materials to protect, to fill, to restore dental elements destroyed by caries, -Operating procedures particularly referred to mini invasive restorations and use of adhesive technique (bio-compatibility and bio-integration with dental tissues) On successful completion of this module, the student should o have profound knowledge of Caries pathology, diagnosis criteria, preparation cavity criteria, filling instruments, preparation of conservative materials. o haveknowledge and understanding of approach strategies to different risks of caries evaluated with clinical and radiological exams, o know guidelines and procedures in cavity preparation and selection and use of different restorative materials, in particular adhesive materials and their interaction with enamel and dentine, o understand and explain different conservative planning and timing of treatment based on outcomes of clinical and radiological records, o understandgoals of a modern approach in conservative dentistry based on concept of prevention and early interception of carious lesions, o demonstrate skill in detection of dental caries on bitewing radiography and abilityto indicate caries classification on site and staging and to formulateaccordingly, different approaches in intervention planning, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know Dental terminology, Teeth and dental arches anatomy and morphology, dental tissues histology and embryologic derivation, micro-biology of oral cavity and caries prevention, x-ray techniques.
4	Teaching methods and language	Lectures, Seminars. Language:Italian Ref. Text books: - Fonzi L.,*"Anatomia funzionale e clinica dello splancnocranio"*,Edi. Ermes (Martina), 2000. -Major M. Ash,*"Anatomia funzionale del dente e dell'occlusione di Wheeler"*, Edi Ermes (Martina), 1986. -Roulet, Degrange,*"Odontoiatria adesiva - una rivoluzione silenziosa",* Masson, 2002. -Sturdevant's,*"Odontoiatria Conservativa- Arte e Scienza"*, Piccin 2004. -Goracci et Altri,*"Otturazioni in composito ed adesione alle strutture dentarie",* Masson, 1994. -Bianchi/Poggio, *"Introduzione alla Odontoiatria restaurativa",*Aracne 2004.
5	Assessment methods and criteria	Oral exam
2) CONSERVATIVE DENTISTRYTRAINEESHIP (2 ECTS)		
Teacher:Maria Chiara MARCI		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to make and interpret X-ray of Maxilla arches, to

		evaluate the caries lesions and to perform the correct treatment by choosing appropriate materials and devices.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of level of caries lesions and identification of appropriate treatment, - Treatment Planning Considerations. On successful completion of this module, the student should o **apply** diagnostic capacity in carious lesions identification, o **analyse** different appropriate technical instruments and materials for different kinds of lesions, o **evaluate** caries risk in different patient typology (undergoing fixed orthodontic treatment, excessive intake of sugar with diet, with defects in dental structure, non-cooperating in oral hygiene habits etc.).
3	Prerequisites and learning activities	The student must know Dental terminology, Teeth and dental arches anatomy and morphology, dental tissues histology and embryologic derivation, micro-biology of oral cavity and caries prevention, x-ray techniques.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of radiologic slides about caries lesions. Language: Italian Ref. Text books: - Fonzi L.,*"Anatomia funzionale e clinica dello splancnocranio"*,Edi. Ermes (Martina), 2000. -Major M. Ash,*"Anatomia funzionale del dente e dell'occlusione di Wheeler"*, Edi Ermes (Martina), 1986. -Roulet, Degrange,*"Odontoiatria adesiva - una rivoluzione silenziosa",* Masson, 2002. -Sturdevant's,*"Odontoiatria Conservativa- Arte e Scienza"*, Piccin 2004. -Goracci et Altri,*"Otturazioni in composito ed adesione alle strutture dentarie",* Masson, 1994. -Bianchi/Poggio*, "Introduzione alla Odontoiatria restaurativa",*Aracne 2004.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1)
3) ENDODONTICS (3 ECTS)		
Teacher:Francesco FIDANZA		
1	Course objectives	The Module is designed to train future Dentist practitioners with a solidscientific background and understanding of clinical treatment of the dental pulp**.**Students will receive instruction on endodontic techniques that include proper case selection, minimally invasive canal access, cleaning, shaping, and obturation.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Endodontologic Science - Treatment Planning - Optimal Anaesthesia for the Endodontic Therapy - Goals of cleaning and shaping - Chemical Disinfection - Root canal dressing and obturation - Antibiotics in endodontic therapy - Adhesive Science - Previous RCT treated tooth and optimised bleaching approach - Endo-periodontolgic conundrum (from GBR/GTR to Crown lengthening) - Endo-prosthetic conundrum: Previous RCT treated tooth – integration in prosthetic concepts - Occlusal concepts for RCT treated teeth – rehabilitation concepts - The caries profunda concept - Direct pulp capping - Pulpectomy - Pulpotomy - Apexification On successful completion of this module, the student should

		o Achieve in depth knowledge of biomedical and clinical sciences as they relate to the science of dentistry and endodontics. o Apply this knowledge to achieve an academic and clinical understanding of the normal and pathologically involved pulp, periradicular and adjacent structures. o Use this knowledge to evaluate and diagnose orofacial pain, pulpal and periradicular conditions. o Effectively provide non-surgical and surgical therapies with appropriate follow-up care, recall and interactions with related medical and dental disciplines. o Evaluate the sterilisation/disinfection procedures for prevention of cross infection in line with evidence-based practice. o Critically assess the different hand instrumentation techniques in cleaning and shaping of the root canal system with reference to in-vitro studies and clinical data. o Critically assess the antimicrobial properties and the effects on tooth structure of root canal irrigants and medicaments advocated historically and supported by the current evidence-base. o Understand the rationale for management of complex pulpal and periradicular diseases and problems. o Critically evaluate the different canal obturation techniques including cold lateral condensation and thermo plasticised gutta-percha techniques o Develop skills for the critical evaluation of dental literature, research and new products for the continous up-dating of their knowledge and competencies
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 scientific English Ref. Text Books: -Castellucci A., *Endodonzia,* Martina, 2007. -Somma F., *Endodonzia,* Elsevier, 2006
5	Assessment methods and criteria	Oral exam

Programme of "PARODONTOLOGIA E PROTESI DENTARIA" ***"PERIODONTOLOGY AND PROSTHODONTICS"*** **This course is composed of four Modules: 1) Periodontology, 2) Periontology Traineeship, 3) Prosthodontics, 4) Prosthodontics Traineeship**		
D3602, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 2nd semester**		
Number of ECTS credits: 11 (total workload is 275 hours; 1 credit = 25 hours)		
1***) PERIODONTOLOGY I (4 ECTS)***		
Teacher:Giuseppe MARZO		
1	Course objectives	TheModule aims to givethe students a valid knowledge of periodontology and connected surgical techniques. Inherent to the program is the clinical training developed during the 5th year of the course,where the student will acquire proficiency in all diagnostic and therapeutic areas of Periodontology, including the surgical aspects of implant therapy. This Module is completed by the practical training provided by Module 2).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Prevention -Anatomy of periodontium -Anatomy in Diseased Periodontal States -Clinical, istological and microbiological elements of periodontology -Classification of periodontitis -Periodontal Surgery -Osseous Surgery -Regenerative Surgery -Bone Physiology Review -Analysis and Diagnosis of Attachment and Bone Loss Based on Morphology -Bone-Preserving and Bone-Augmenting Therapeutic Options -Implantology

		On successful completion of this module, the student should: o have profound knowledge of anatomy of periodontium, o haveknowledge and understanding of diagnosis and therapy of perodontitis, o be able to diagnose and differentiate periodontal diseases and conditions, and demonstrate in-depth knowledge of periodontal disease progression, o understand and explain procedures for the identification and preparation of a treatment plan, o develop, establish, and execute a comprehensive periodontal treatment plan for periodontally involved patients, o demonstrate a broad based knowledge and understandingof dental literature, research, and products as it relates to Periodontics.
3	Prerequisites and learning activities	The student must know oral histology and anatomy. The programme consists of a didactic course with a programmed series of modules including lectures, seminars, tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.
4	Teaching methods and language	Lectures, presentation, exercitation Language: Italian and scientific English Ref. Text books -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Oral exam
2) PERIODONTOLOGY ITRAINEESHIP (2 ECTS)		
Teacher:Giuseppe MARZO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to make diagnosis of periodontitis, to define periodontal health goals and plan the correct treatment.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Presentation of clinical cases, - Collection of relevant medical and dental information, - Assessment and assimilation of the collected information, - Evaluation of treatment and healthcare outcomes - discussion on diagnostic procedures, - classification of level of lesions and identification of appropriate treatment, - Treatment Planning Considerations. On successful completion of this module, the student should o apply diagnostic capacity in periodontical lesions identification, o analyse different appropriate health goals for different kinds of lesions, o evaluatemedical information and define appropriate treatment
3	Prerequisites and learning activities	The student must know histology and anatomy. The programme consists tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.
4	Teaching methods and language	Team work, exercises, reports, preparation and discussion medical and dental information data. Language: Italian Ref. Text books: -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1).
3) PROSTHODONTICS (4 ECTS)		

Teacher:Alessandro SPADARO		
1	Course objectives	The Module aims to provide the student with a theoretical and practical knowledge necessary to make a diagnosis of patients who require restoration of the integrity of the dental arches in order to plan and to build the related prosthetic rehabilitation. The course consists of a classroom teaching , practical pre-clinical and clinical internship within Module 4) in the Clinical Department.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Epidemiology of partial and total edentulism - Classification of Prosthodontics - General medical psychological aspects of the patient - Diagnosis and treatment plan - Clinical, morpho- structural, radiological examination of the stomatognathic system - Functional analysis of the stomatognathic system - Neuromuscular approach in dentistry - TENS, Semg and KNS equipment. -Treatment of total edentulism by neuromuscular total removable rehabilitation - Treatment of edentulism by partial fixed prosthesis - The treatment of edentulism by partial removable denture - The partial and total edentulism treatment by implant- prosthesis - Functional evaluation of the integration in the stomatognathic system of dental manufact. On successful completion of this module, the student should o have profound knowledge of the rehabilitation of a partially or fully edentulous patient. o haveknowledge and understanding of how to make diagnosis of patients who require restoration of integrity of the dental arches, o understand and explainhow to plan a neuromuscular prosthetic rehabilitation, o understandthe topics linked to a clinic successful approach, o demonstrate skill to make diagnosis and ability to perform the techniques and procedures essential to clinical activity, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the anatomy, physiology of the stomatognathic system and the merceological aspects of prosthetic rehabilitation. The didactic activity consists of lectures and seminars designed to transmit the necessary theoretical knowledge for the rehabilitation of a partially or fully edentulous patient. The practical exercises are performed on pre-clinical models of study, extracted teeth , simulators in order to enable the students to the techniques and procedures essential to clinical activity .
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Oral exam
4) PROSTHODONTICS TRAINEESHIP (2 ECTS)		
Teacher:Alessandro SPADARO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 3). The student will learn how to plan and prepare prosthesis.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - Prosthesic treatment Planning Considerations. On successful completion of this module, the student should o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of prosthesis,

		o evaluate risks connected with mastication and occlusion.
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinicdepartment in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and a proper prosthetic rehabilitation.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of radiologic slides about caries lesions. Language: Italian Ref. Text books: -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 3)

Programme of "ENDODONZIA E ODONTOIATRIA RESTAURATIVA" ***"ENDODONTICS AND RESTORATIVE DENTISTRY"*** **This course is composed of four modules: 1) Restorative Dentistry, 2) Restorative Dentistry Traineeship, 3) Endodontics, 4) Endodontics Traineeship.**		
D3612, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 1st semester**		
Number of ECTS credits: 8 (total workload is 200 hours; 1 credit = 25 hours)		
1***) RESTORATIVE DENTISTRY (2 ECTS)***		
Teacher:Maurizio D'AMARIO		
1	Course objectives	TheModule aims to provide students with a solid intellectual and technical knowledge of adhesive dentistry. The course is designed to provide an advanced evidence-based core knowledge in modern esthetic and restorative dentistry and to refine practical skills. This Module is completed by the practical training provided by Module 2).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Aspects of esthetics and contemporary restorative dentistry. -Treatment planning and smile design, composites (direct and indirect restorations), -Anatomical layering technique for frontal and posterior dentition, ceramic veneers, ceramic posterior restorations, esthetic fiber reinforced composite restorations, fiber posts, -Science of contemporary esthetic materials as well as periodontal esthetics. On successful completion of this module, the student should: o have profound knowledge of Rubber Dam application and field isolation in esthetic dentistry, o know and understand Composite selection, Dentino-enamel adhesives, Esthetic anterior restorations, Direct Posterior restorations, Inlay-Onlays (from preparation to cementation), Dental ceramics, Porcelain laminate veneers (from preparation to cementation), Restoration of Endodontically treated teeth, Fiber posts. o haveknowledge and understanding of Advanced Aesthetic treatments, Artistic and scientific in smile design (Face, lips, teeth and periodontium), Dental aspect of a smile (Ideal proportions of the teeth, symmetry, perspective and illusion). o demonstrate skill and ability in the application of Rubber Dam, Anterior and Posterior Cavity preparation and Filling according to the layering technique concept, Inlay and Onlays preparations, Porcelain laminate veneers preparations. o demonstrate capacity forreading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know aetiology of caries lesions and have a scientifically-based rationale for all diagnostic, treatment planning, and patient care decisions. Work placement in Module 2) is characterized by the frequency of the clinical Operative Unit of Restorative Dentistry and the frequency of the training clinical program.
4	Teaching methods and language	Lectures, laboratory time. Language: Italian and scientific English Ref. Text books: - AIC - Accademia Italiana di Conservativa - *Odontoiatria Restaurativa - Procedure di trattamento e prospettive future*. Elsevier Ed, 2009. - Gurel G.,*La scienza e l' arte delle Faccette in ceramica*, Quintessenza, 2004.

		- Vanini Lorenzo; Mangani F., Klimovskaia O., *Il restauro conservativo dei denti anteriori*, Promoden-Acme, 2011.
5	Assessment methods and criteria	Oral exam
2) RESTORATIVE DENTISTRY TRAINEESHIP (2 ECTS)		
Teacher:Maurizio D'AMARIO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to prepare materials and perform restorative dentistry in concrete cases
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Presentation of clinical cases, - Collection of relevant medical and dental information, - Assessment and assimilation of the collected information, - Evaluation of treatment plan decision - Discussion on treatment procedures, - Treatment Planning Considerations and evaluation. On successful completion of this module, the student should o apply diagnostic capacity in restorative dentistryapplication, o analyse different appropriate aesthetic goals for different kinds of lesions, o evaluatetechnologies and materials and define appropriate treatment
3	Prerequisites and learning activities	The student must know aetiology of caries lesions and have a scientifically-based rationale for all diagnostic, treatment planning, and patient care decisions. The programme consists tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Restorative Dentistry.
4	Teaching methods and language	Team work, exercises, reports, preparation and discussion medical and dental information data. Language: Italian and scientific English Ref. Text books: - AIC - Accademia Italiana di Conservativa - *Odontoiatria Restaurativa - Procedure di trattamento e prospettive future*. Elsevier Ed, 2009. - Gurel G., *La scienza e l' arte delle Faccette in ceramica*, Quintessenza, 2004. - Vanini Lorenzo; Mangani F., Klimovskaia O., *Il restauro conservativo dei denti anteriori*, Promoden-Acme, 2011.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1).
3) ENDODONTICS (3 ECTS)		
Teacher:Renato RASICCI		
1	Course objectives	The Course prepares students theoretically and practically to the treatment of devitalized teeth with complete endodontic notions. The Module aims to provideknowledge and understanding of the subject and its practical application. The course consists of a classroom teaching , practical pre-clinical and clinical internship within Module 4) in the Clinical Department.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - The isolation of the operative field -The opening of the pulp chamber -Cleansing of the root canal system -The pulp chamber -Nickel-titanium endodontic -The radiographic findings and periodontal lesions -Endodontics minimally invasive -Diagnostic elements -Biogical approach to BioRace -Materiali di otturazione canalare -Tecniche di strumentazione On successful completion of this module, the student should o Achieve in depth knowledge of biomedical and clinical sciences as they relate to the

		science of dentistry and endodontics. o Apply this knowledge to achieve an academic and clinical understanding of the normal and pathologically involved pulp, periradicular and adjacent structures. o Use this knowledge to evaluate and diagnose orofacial pain, pulpal and periradicular conditions. o Effectively provide non-surgical and surgical therapies with appropriate follow-up care, recall and interactions with related medical and dental disciplines. o Evaluate the sterilisation/disinfection procedures for prevention of cross infection in line with evidence-based practice. o Critically assess the different hand instrumentation techniques in cleaning and shaping of the root canal system with reference to in-vitro studies and clinical data. o Critically assess the antimicrobial properties and the effects on tooth structure of root canal irrigants and medicaments advocated historically and supported by the current evidence-base. o Understand the rationale for management of complex pulpal and periradicular diseases and problems. o Critically evaluate the different canal obturation techniques including cold lateral condensation and thermo plasticised gutta-percha techniques o Develop skills for the critical evaluation of dental literature, research and new products for the continous up-dating of their knowledge and competencies
3	Prerequisites and learning activities	The student must know the anatomy, physiology of the stomatognathic system and the prosthetic rehabilitation. The didactic activity consists of lectures and seminars designed to transmit the necessary theoretical knowledge for the professional practice. The practical exercises are performed on pre-clinical models of study, extracted teeth , simulators in order to enable the students to the techniques and procedures essential to clinical activity .
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books - Arnaldo Castellucci,*Endodonzia,*Ed Martina, 2005
5	Assessment methods and criteria	Oral exam
4) ENDODONTICS TRAINEESHIP (2 ECTS)		
Teacher:AnnaMaria DIONISI		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 3). The student will learn how to plan and prepare pulp channel and chamber.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - preparation of the root treatment and pulp chambers, - surgicaltreatment of lesions.. On successful completion of this module, the student should o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of surgical interventions, o evaluate risks connected with infection and manipulation..
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinic department in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and a proper treatment procedures.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of radiologic slides about lesions. Language: Italian

		Ref. Text books - Arnaldo Castellucci,*Endodonzia,*Ed Martina, 2005
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 3)

Programme of "PARODONTOLOGIA" ***"PERIODONTOLOGY"*** **This course is composed of ftwo Modules: 1) Periodontology II, 2) Periontology II Traineeship**		
D3632, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 1st semester**		
Number of ECTS credits: 7 (total workload is 175 hours; 1 credit = 25 hours)		
1) PERIODONTOLOGY II (5 ECTS)		
Teacher:Giuseppe MARZO		
1	Course objectives	TheModule aims to givethe students a valid knowledge of periodontology and connected surgical techniques. Inherent to the program is the clinical training developed where the student will acquire proficiency in all diagnostic and therapeutic areas of Periodontology, including the surgical aspects of implant therapy. This Module is completed by the practical training provided by Module 2).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Periodontal Surgery -Osseous Surgery -Regenerative Surgery -Bone Physiology Review -Analysis and Diagnosis of Attachment and Bone Loss Based on Morphology -Bone-Preserving and Bone-Augmenting Therapeutic Options -Implantology On successful completion of this module, the student should: o have profound knowledge of anatomy of periodontium, o haveknowledge and understanding of diagnosis and therapy of perodontitis, o be able to diagnose and differentiate periodontal diseases and conditions, and demonstrate in-depth knowledge of periodontal disease progression, o understand and explain procedures for the identification and preparation of a treatment plan, o develop, establish, and execute a comprehensive periodontal treatment plan for periodontally involved patients, o demonstrate a broad based knowledge and understandingof dental literature, research, and products as it relates to Periodontics.
3	Prerequisites and learning activities	The student must know oral histology and anatomy. The programme consists of a didactic course with a programmed series of modules including lectures, seminars, tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.
4	Teaching methods and language	Lectures, presentation, exercitation Language: Italian and scientific English Ref. Text books -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Oral exam
2) PERIODONTOLOGY IITRAINEESHIP (2 ECTS)		
Teacher:Giuseppe MARZO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to make diagnosis of periodontitis, to define periodontal health goals and plan the correct treatment.

2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Presentation of clinical cases, - Collection of relevant medical and dental information, - Assessment and assimilation of the collected information, - Evaluation of treatment and healthcare outcomes - discussion on diagnostic procedures, - classification of level of lesions and identification of appropriate treatment, - Treatment Planning Considerations. On successful completion of this module, the student should o apply diagnostic capacity in periodontical lesions identification, o analyse different appropriate health goals for different kinds of lesions, o be able to perform basic periodontical surgery, o become aware of the complex and integrated knowledge-based technologies used in implatology, o evaluatemedical information and define appropriate treatment
3	Prerequisites and learning activities	The student must know histology and anatomy and the course Endodontics I. The programme consists of tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.
4	Teaching methods and language	Team work, exercises, reports, preparation and discussion medical and dental information data. Language: Italian Ref. Text books: -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1).

Programme of "PATOLOGIA E CHIRURGIA MAXILLO-FACCIALE" ***"PATHOLOGY AND MAXILLO-FACIAL SURGERY"*** **This course is composed of four modules: 1) Oral Surgery II, 2) Oral Surgery II Traineeship, 3) Maxillo-Facial Surgery, 4) Otorhinolaringoiatry.**		
D3650, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 1st semester**		
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)		
1***) ORAL SURGERY II (2 ECTS)***		
Teacher:Claudia MAGGIORE		
1	Course objectives	The aim of the course is to provide sufficient evidence for a good diagnosis and treatment of oral diseases.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Extraction of teeth & retained roots/pathology -Management of associated complications including oro-antral fistula -Management of odontogenic and all other oral infections -Management of complications -Peri-radicular surgery -Dentoalveolar surgery in relation to orthodontic treatment - Appropriate pain and anxiety control including the administration of standard conscious sedation techniques -Management of adults and children as in-patients, including the medically at risk patient -Clinical diagnosis of oral cancer and potentially malignant diseases, -The diagnosis of dentofacial deformity and familiarity with its management and treatment -Diagnosis of oral mucosal diseases and familiarity with their management and appropriate treatment -Control of cross-infection -Medico-legal aspects of oral surgery

		On successful completion of this module students will be expected to gain knowledge of the scientific basis of the clinical speciality as well as the principles of oral disease diagnosis and patient management summarised as follows: o Knowledge of anatomy, physiology, development and pathology of the teeth and supporting tissues, the jaws and orofacial tissues, applied surgical anatomy of perioral structures, o knowledge of the cranial nerves and understanding of a correlation between anatomy and clinical examination, o knowledge and understanding of applied pathology of oral mucosal lesions, odontogenic tumours, cysts of the jaws and related soft tissue lesions, o identificationof oral premalignancy and malignancy o recognitionof oral microbial disease o knowledge of properties of relevant biomaterials and application of anaesthesia, analgesia and sedation, o capacity to manage medical emergencies and the unconscious patient, o knowledgeof pharmacology of the main agents encountered in the practice of dentoalveolar surgery, including drugs being taken by patients and those which may be prescribed in the practice of oral surgery.
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	Lectures, team work and clinical practice. Language:Italian Ref. Text Books: G. F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.
5	Assessment methods and criteria	Oral Exam
2) ORAL SURGERYII TRAINEESHIP (2 ECTS)		
Teacher:Claudia MAGGIORE		
1	Course objectives	This Module is the practical application of the theoretical concepts and constitutes an integral part, of Module 1). It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make perform the basic surgical interventions and become able to make diagnosis and plan the correct surgical treatment.
2	Course content and Learning outcomes (Dublin descriptors)	The course consists of: -Presentation and discussion of clinical cases through practical examples, -Practical exercises on methodologies and techniques for performing basic surgery, -Correct use of equipment and tools. At the end of the Modules 1) and 2) the student will be able to o Make a diagnosis, o Plan a surgical treatment through theclinical examination, o Use the correct methods and tools for performing oral surgery, o Know the correct use and the limits of technologies.
3	Prerequisites and learning activities	The student must know anatomy of dental structures and notions of correlations within oro-facial structures..
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text books: -G.F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.
5	Assessment methods and criteria	This Module is the practical application of the theoretical concepts and constitutes an integral part, of Module 1). It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make perform the basic surgical interventions and become able to make diagnosis and plan the correct surgical treatment.
3) MAXILLO-FACIAL SURGERY (3 ECTS)		
Teacher:Tommaso CUTILLI		
1	Course objectives	The aim of this Module is to provide the students with knowledgeand understanding of the main clinical aspects and surgical problems occurring in the treatment of the varied diseases of the soft and hard tissues of the oral and maxillofacial region(traumatology; congenit and acquired malformations; oncology). The students will know and understanddiagnosis, surgical treatment, and peri-operative

		management of adults and understand the connections between the dysmorphosis of maxilla with posture deviations and neck and facial pain.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Embriology and Anatomy of the neck-head-facial structure -Nervous and vascular system of the neck-head-oro-facial system, -Clinical features of the main cranio-facial malformations -Trauma and surgical reconstruction, -Dysmorphosis and Orthognathic Surgery, -Temporomandibular Joint pathologies and Surgery, - Clinical elements of Maxillofacial Tumors, -Oral and osseous pathology in advanced oral surgery. -Trauma classifications and reconstructive technologies. On successful completion of this module, the student should o Achieve knowledge of biomedical and clinical sciences as they relate to the maxilla disctrict, o Apply this knowledge to achieve clinical understanding of the normal and pathological conditions of maxilla and adjacent structures, o Use this knowledge to diagnose and differentiatedisease and pain of the orofacial complex, head and neck, o Understand and explain the osteolytic maxillary lesions, o Gain awareness of orthopedic techniques for treatment of dento-maxillary trauma and ability to understand and interpret the diagnostic imaging, o Critically assessclinical cases as presented in the operatory room, o Develop skills for the critical evaluation of scientific literature, research and new products for the continous up-dating of their knowledge and competencies.
3	Prerequisites and learning activities	The student must know the anatomy, embryology and physiology of the stomatognathic system as well as Pharmacology. The didactic activity consists of lectures and seminars designed to transmit the necessary theoretical knowledge for the professional practice. The practical exercises are performed in theoperatoryroom .
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books: -Italian Society of Maxillofacial Surgery *" Maxillofacial Surgical Pathology "* 2007, Minerva Ed Turin - Italy -Brusati R, Sesenna E: *Chirurgia delle deformità mascellari*. 2008, Masson Ed, Milano
5	Assessment methods and criteria	Oral exam
4) OTORHINOLARYNGOIATRY(3 ECTS)		
Teacher:Maurizio ORTU		
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. the student should understand the disease and plan a correct pharmacological/ surgically treatment, also in collaboration with the otorhinolaryngologist.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: Clinical elements to oral diseases, salivary cancer, oral cancer, ear and nose diseases, sinusitis, emergency treatments, oral respiration related to orthodontic treatment . On successful completion of this module, the students should: o haveknowledge of lesions of oral cavity o be able to perform a early diagnosis of oral and salivary tumors; o haveknowledge and understanding of emergency situations such as the inhalation of foreign bodies; o gainknowledge of the scientific basis and principles of disease diagnosis in otorhinolaryngoiatry and patient management, 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 anatomy and pathology of oral maxillofacial region. The students must know histology, pathologic anatomy, oral clinic.

4	Teaching methods and language	Lectures, seminars. Language: Italian and English Ref. Text Books: -G. Rossi, O*torinolaringoiatria*, Edizioni Minerva Medica, 2013.
5	Assessment methods and criteria	Oral Exam.

Programme of "PROTESI DENTARIA" ***"PROSTHODONTICS"*** **This course is composed of two Modules: 1) Prosthodontics, 2) Prosthodontics Traineeship**		
D3696, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 2nd semester**		
Number of ECTS credits: 4 (total workload is 100 hours; 1 credit = 25 hours)		
1) PROSTHODONTICS II (3 ECTS)		
Teacher: Claudio RASTELLI		
1	Course objectives	The Module aims to provide the student with a theoretical and practical knowledge necessary to make a diagnosis of patients who require restoration of the integrity of the dental arches in order to plan and to build the related prosthetic rehabilitation. The course consists of a classroom teaching , practical pre-clinical and clinical internship within Module 2) in the Clinical Department.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Epidemiology of partial and total edentulism - Classification of Prosthodontics - General medical psychological aspects of the patient - Diagnosis and treatment plan - Clinical, morpho- structural, radiological examination of the stomatognathic system - Functional analysis of the stomatognathic system - Neuromuscular approach in dentistry - Treatment of edentulism by partial fixed prosthesis - The treatment of edentulism by partial removable denture - The partial and total edentulism treatment by implant- prosthesis - Functional evaluation of the integration in the stomatognathic system of dental manufact. On successful completion of this module, the student should o have profound knowledge of the rehabilitation of a partially or fully edentulous patient. o haveknowledge and understanding of how to make diagnosis of patients who require restoration of integrity of the dental arches, o understand and explainhow to plan a neuromuscular prosthetic rehabilitation, o understandthe topics linked to a clinic successful approach, o demonstrate skill to make diagnosis and ability to perform the techniques and procedures essential to clinical activity, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the anatomy, physiology of the stomatognathic system and the merceological aspects of prosthetic rehabilitation. The didactic activity consists of lectures and seminars designed to transmit the necessary theoretical knowledge for the rehabilitation of a partially or fully edentulous patient. The practical exercises are performed on pre-clinical models of study, extracted teeth , simulators in order to enable the students to the techniques and procedures essential to clinical activity .
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Oral exam
2) PROSTHODONTICS II TRAINEESHIP (1 ECTS)		

Teacher:Claudio RASTELLI		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to plan and prepare prosthesis.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - Prosthetic treatment Planning Considerations, - Practical preparation and application of a prosthesis. On successful completion of this module, the student should o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of prosthesis, o evaluate risks connected with mastication and occlusion.
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinic department in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and a proper prosthetic rehabilitation.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of radiologic slides about caries lesions. Language: Italian Ref. Text books -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1)

Programme of "CLINICA ODONTOSTOMATOLOGICA" ***"CLINICAL ODONTOSTOMATOLOGY"*** **This course is composed of two Modules:** **1) Clinical Odontostomatology, 2) Clinical Odontostomatology Traineeship**		
D4381, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 2nd semester**		
Number of ECTS credits: 6 (total workload is 100 hours; 1 credit = 25 hours)		
1) CLINICAL ODONTOSTOMATOLOGY(4 ECTS)		
Teacher:Mario GIANNONI		
1	Course objectives	The Module aims to provide the student with a theoretical and practical knowledge necessary to make a diagnosis of oral and maxillo facial diseases and plan their treatment. The course consists of a classroom teaching , practical pre-clinical and clinical internship within Module 2) in the Clinical Department.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Oral diseases, burning mouth syndrome, diagnostic protocol ,therapeutic orientations , - the effects of drugs on the oral cavity, pigmentation, lesions, salivary glands dysfunctions - Precancerous lesions and oral carcinomas: diagnostic protocol, prognostic factors, Surgical and Medical treatment, - The prevention of oral carcinomas, - Odontostomatological diseases connected with Radiotherapy, Chemotherapy and surgical treatments, - Treatment protocol for the radio-chemo-treated oncological patient, - Pain in the craniofacial district, - Allergies in odontostomatology. On successful completion of this module, the student should: - have good knowledge of diagnosis of oral diseases and clinical practice, - haveknowledge of preventive dentistry, - know andunderstand the different clinical aspects of diseases in oral pathology ,

		- demonstrate skill in diagnosis of dental diseases and ability to select appropriate preventive strategies, -be able to implement targeted protocols for prevention, treatment and maintenance of oral health, - knowhow to use of modern instruments, both clinical and laboratory devices.
3	Prerequisites and learning activities	The student must know the anatomy, physiology of the stomatognathic system. Learning activities include attending lectures and seminars for the acquisition of the necessary theoretical knowledge and performing practical exercises on pre-clinical models.
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books: -Teacher's Notes
5	Assessment methods and criteria	Oral exam
2) CLINICAL ODONTOSTOMATOLOGYTRAINEESHIP (2 ECTS)		
Teacher:Mario GIANNONI		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to make diagnosis of the main oral diseases and design treatment plan..
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - pulpopatie and apical parodontitis, abscesses and phlegmon, - inflammatory and infectious diseases: glossitis, stomatitis, candidiasis, herpes, - oral precancerous lesions and cancer. On successful completion of this module, the student should o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of treatment, o evaluate risks connected with early detection of tumours, o are aware of the effects of drugs on oral cavity condition, o be able to make a treatment plan for the major diseases of the oral district.
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinic department in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and to adopt a proper treatment.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of diagnostic imaging slides about lesions. Language: Italian Ref. Text books: -Teacher's Notes
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1)

Programme of "IMPLANTOLOGIA" ***"IMPLANTOLOGY"*** **This course is composed of six Modules: 1) Oral Surgery III, 2) Oral Surgery III Traineeship, 3) Prosthodontics III, 4) Prosthodontics III Traineeship, 5) Periodontology III, 6) Periodontology III Traineeship.**		
D3728, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 2nd semester**		
Number of ECTS credits:9 (total workload is 225 hours; 1 credit = 25 hours)		
1***) ORAL SURGERY III (2 ECTS)***		
Teacher:Claudia MAGGIORE		
1	Course objectives	The aim of the course is to provide evidence for a good diagnosis and treatment of oral diseases.This Module intends to extend and deepen knowledge and understanding of the topics covered in Oral Surgery I and II.

2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Extraction of teeth & retained roots/pathology -Management of associated complications including oro-antral fistula -Management of odontogenic and all other oral infections -Management of complications -Peri-radicular surgery -Dentoalveolar surgery in relation to orthodontic treatment - Appropriate pain and anxiety control including the administration of standard conscious sedation techniques -Management of adults and children as in-patients, including the medically at risk patient -Clinical diagnosis of oral cancer and potentially malignant diseases, -The diagnosis of dentofacial deformity and familiarity with its management and treatment -Diagnosis of oral mucosal diseases and familiarity with their management and appropriate treatment -Control of cross-infection -Medico-legal aspects of oral surgery On successful completion of this module students will be expected to gain knowledge of the scientific basis of the clinical speciality as well as the principles of oral disease diagnosis and patient management summarised as follows: o Knowledge of anatomy, physiology, development and pathology of the teeth and supporting tissues, the jaws and orofacial tissues, applied surgical anatomy of perioral structures, o knowledge of the cranial nerves and understanding of a correlation between anatomy and clinical examination, o knowledge and understanding of applied pathology of oral mucosal lesions, odontogenic tumours, cysts of the jaws and related soft tissue lesions, o identificationof oral premalignancy and malignancy o recognitionof oral microbial disease o knowledge of properties of relevant biomaterials and application of anaesthesia, analgesia and sedation, o capacity to manage medical emergencies and the unconscious patient, o knowledgeof pharmacology of the main agents encountered in the practice of dentoalveolar surgery, including drugs being taken by patients and those which may be prescribed in the practice of oral surgery.
3	Prerequisites and learning activities	The student must know oral pathology and cranium-mandibular dysfunctions.
4	Teaching methods and language	Lectures, team work and clinical practice. Language:Italian Ref. Text Books: G. F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.
5	Assessment methods and criteria	Oral Exam
2) ORAL SURGERY III TRAINEESHIP (1 ECTS)		
Teacher:Claudia MAGGIORE		
1	Course objectives	This Module is the practical application of the theoretical concepts and constitutes an integral part, of Module 1). It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make perform the basic surgical interventions and become able to make diagnosis and plan the correct surgical treatment.
2	Course content and Learning outcomes (Dublin descriptors)	The course consists of: -Presentation and discussion of clinical cases through practical examples, -Practical exercises on methodologies and techniques for performing basic surgery, -Correct use of equipment and tools. At the end of the Modules 1) and 2) the student will be able to o Make a diagnosis, o Plan a surgical treatment through theclinical examination, o Use the correct methods and tools for performing oral surgery, o Know the correct use and the limits of technologies.

3	Prerequisites and learning activities	The student must know anatomy of dental structures and notions of correlations within oro-facial structures..
4	Teaching methods and language	Lectures, team work and clinical practice Language:Italian and scientific English Ref. Text books: -G.F. Pajarola - H. F. Sailer., *Chirurgia Orale*, Masson, 1996.
5	Assessment methods and criteria	This Module is the practical application of the theoretical concepts and constitutes an integral part, of Module 1). It provides the students with the practical skills and abilities needed in their professional life. They will learn how to make perform the basic surgical interventions and become able to make diagnosis and plan the correct surgical treatment.
3) PROSTHODONTICS III (2 ECTS)		
Teacher:Claudio RASTELLI		
1	Course objectives	The Module aims to deepen and extend the theoretical and practical knowledge provided in the previous Modules *Prosthodontics I and II*. The students will acquire the adequate cultural background and practical experience enabling them to make a diagnosis of patients who require restoration of the integrity of the dental arches and to plan and to build the related prosthetic rehabilitation. The course consists of a classroom teaching , practical pre-clinical and clinical internship within Module 4) in the Clinical Department.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Epidemiology of partial and total edentulism - Classification of Prosthodontics - General medical psychological aspects of the patient - Diagnosis and treatment plan - Clinical, morpho- structural, radiological examination of the stomatognathic system - Functional analysis of the stomatognathic system - Neuromuscular approach in dentistry - Treatment of edentulism by partial fixed prosthesis - The treatment of edentulism by partial removable denture - The partial and total edentulism treatment by implant- prosthesis - Functional evaluation of the integration in the stomatognathic system of dental manufact. On successful completion of this module, the student should o have profound knowledge of the rehabilitation of a partially or fully edentulous patient. o haveknowledge and understanding of how to make diagnosis of patients who require restoration of integrity of the dental arches, o understand and explainhow to plan a neuromuscular prosthetic rehabilitation, o understandthe topics linked to a clinic successful approach, o demonstrate skill to make diagnosis and ability to perform the techniques and procedures essential to clinical activity, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the anatomy, physiology of the stomatognathic system and the theoretical and practical contents of Prosthodontics I and II. The didactic activity consists of lectures and seminars designed to transmit the necessary theoretical knowledge for the rehabilitation of a partially or fully edentulous patient. The practical exercises are performed on pre-clinical models of study, simulators in order to enable the students to the techniques and procedures essential to clinical activity .
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Oral exam
4) PROSTHODONTICS III TRAINEESHIP (1 ECTS)		
Teacher:Claudio RASTELLI		

1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 4). The student will learn how to plan and prepare prosthesis.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - Prosthetic treatment Planning Considerations, - Practical preparation and application of a prosthesis. On successful completion of this module, the student should o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of prosthesis, o evaluate risks connected with mastication and occlusion.
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinic department in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and a proper prosthetic rehabilitation.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of radiologic slides about caries lesions. Language: Italian Ref. Text books -Castellani D.,*Atlante di Protesi Fissa*,Ed Martina, 2005. -Canton A., Marino G.,*Guida al successo in protesi mobile completa*, Ed. Martina, 2005. -M. Davarpanah H. Martinez,*Manuale di implantologia clinica*, Ed. Masson, 2001. -Teacher's Notes
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1)
	5) PERIODONTOLOGY III (3 ECTS)	
Teacher:Giuseppe MARZO		
1	Course objectives	The Module aims to deepen and extend the theoretical and practical knowledge provided in the previous Modules *Periodontology I and II*. The students will acquire the adequate cultural background and practical experience of periodontology and connected surgical techniques enabling them to acquire proficiency in all diagnostic and therapeutic areas of Periodontology, including the surgical aspects of implant therapy. This Module is completed by the practical training provided by Module 6).
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Periodontal Surgery -Osseous Surgery -Regenerative Surgery -Bone Physiology Review -Analysis and Diagnosis of Attachment and Bone Loss Based on Morphology -Bone-Preserving and Bone-Augmenting Therapeutic Options -Implantology On successful completion of this module, the student should: o have profound knowledge of anatomy of periodontium, o haveknowledge and understanding of diagnosis and therapy of perodontitis, o be able to diagnose and differentiate periodontal diseases and conditions, and demonstrate in-depth knowledge of periodontal disease progression, o understand and explain procedures for the identification and preparation of a treatment plan, o develop, establish, and execute a comprehensive periodontal treatment plan for periodontally involved patients, o demonstrate a broad based knowledge and understandingof dental literature, research, and products as it relates to Periodontics.
3	Prerequisites and learning activities	The student must know oral histology and anatomy. The programme consists of a didactic course with a programmed series of modules including lectures, seminars, tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.

4	Teaching methods and language	Lectures, presentation, exercitation Language: Italian and scientific English Ref. Text books -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Oral exam
6) PERIODONTOLOGY IIITRAINEESHIP (1 ECTS)		
Teacher:Giuseppe MARZO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 5). The student will learn how to make diagnosis of periodontitis, to define periodontal health goals and plan the correct treatment.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - Presentation of clinical cases, - Collection of relevant medical and dental information, - Assessment and assimilation of the collected information, - Evaluation of treatment and healthcare outcomes - discussion on diagnostic procedures, - classification of level of lesions and identification of appropriate treatment, - Treatment Planning Considerations. On successful completion of this module, the student should o apply diagnostic capacity in periodontical lesions identification, o analyse different appropriate health goals for different kinds of lesions, o be able to perform basic periodontical surgery, o become aware of the complex and integrated knowledge-based technologies used in implatology, o evaluatemedical information and define appropriate treatment
3	Prerequisites and learning activities	The student must know histology and anatomy and the theoretical and practical contents of the Modules *Periodontology I and II.* The programme consists of tutorials, group discussion and an extensive review of the literature of all topics relevant to the field of Periodontology.
4	Teaching methods and language	Team work, exercises, reports, preparation and discussion medical and dental information data. Language: Italian Ref. Text books: -Jan Lindhe, Niklaus P. Lang, Thorkild Karring, *Parodontologia e implantologia dentale*, Ed. Ermes, 2009. -V. Campanella, M.R. Giuca, G. Marzo, *Le Patologie Cistiche in età Pediatrica*, Ed. Delfino, 2002. -G. Zucchelli, *Chirurgia Estetica Mucogengivale*, Quintessenza Ed., 2012.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1).

Programme of "ODONTOIATRIA PEDIATRICA" *"PEDIATRIC DENTISTRY"*		
This course is composed of three Modules: 1) Pediatric Dentistry, 2) Pediatric Dentistry Traineeship, 3) General and Specialistic Pediatrics.		
D3714, Compulsory **Single Second Cycle Degree in DENTISTRY, 5th year, 2nd semester**		
Number of ECTS credits: 9 (total workload is 225 hours; 1 credit = 25 hours)		
1) PEDIATRIC DENTISTRY (4 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

		children's 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. Special emphasis will be put on the oral manifestations of systemic diseases and frameworks pertaining odontogenic pathologies early onsetand oral surgery. The student will gain knowledge of the dynamic structural and functional components of the skeletal, dental and neuromuscular disorders of the cranio-facial district and ability to implement the prevention of caries, periodontal disease and malocclusion.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Psychological and pharmacological approach of the pediatric patient, -Methods and techniques for the diagnostic process in clinical pedodontics, -Identification of the major forms of congenital and acquired pathological development of the maxillofacial district, - Local anesthesia drugs, methods and technologies, -Conservative therapy and pulp therapy of deciduous teeth, -Conservative treatment of immature permanent teeth, capping, pulp therapy and apexification, -Dental trauma in deciduous and permanent teeth, -Surgical therapy of soft tissue, -Interceptive and functional orthodontic treatment, -Individual and community prevention of oral diseases and preventive information to parents and children. On successful completion of this module, the student should o have profound knowledge of diagnosis and clinical practice, o haveknowledge and understanding of therapeutic elements, o understand and explain oral pathology and preventive dentistry in pediatric dentistry, o demonstrate skill in pediatric dentistry and ability to professional care, o demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	Essential for the successful completion of this Module is the previous knowledgeof embryology, physiology, pathology, clinical pediatric dentistry theory focused on the growth and development of physiological and pathological aging of the entire stomatognathic system. In specific topics other knowledge is necessary in order to understand dental embryology, morphology of the deciduous teeth, the processes of craniofacial development, physiology of the stomatognathic system.
4	Teaching methods and language	Lectures, team work, exercises, home work, report. Language: Italian Ref. Text books : -Ralph E., Mc Donald, David R. Avery *"Odontoiatria per il bambino e l'adolescente*", 7° ed., Antonio Delfino Editore, 2002. -Campanella – M.R. Giuca – G. Marzo " *Le patologie cistiche in eta' pediatrica*" Delfino Editore, 2002. -G. Gallusi *" Compendio di odontostomatologia pediatrica"*, Piccin Editore, 1985. -K.D. Snawder *" Manuale di clinica pedodontica",*Scienza e Tecnica Dentistica – Ed. Internazionali s.n.c. Milano, 2000. -R. Gatto, *Lezioni di Pedodonzia,* Varesi Ed., 2014.
5	Assessment methods and criteria	Oral exam
2) PEDIATRIC DENTISTRY TRAINEESHIP (1 ECTS)		
Teacher:Roberto GATTO		
1	Course objectives	Aim of this Module is to give practical training on the theoretical concepts introduced in Module 1). The student will learn how to prevent and care pediatric dental pathologies.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: - presentation of clinical cases, - presentation of X-ray images and discussion on diagnostic procedures, - classification of lesions and identification of appropriate treatment, - Conservative dentistry in children, - Prosthetic application on children, - Orthodontics. On successful completion of this module, the student should

		o apply diagnostic capacity in lesions identification, o analyse different appropriate technical instruments and materials for different kinds of pathologies, o evaluate risks connected with dysmorphotic grow.
3	Prerequisites and learning activities	The clinical training is accomplished by attending the dental clinic department in which the student performs clinical experience with direct tutorial control, to develop skills to make a diagnosis and a proper clinical pediatric dentistry.
4	Teaching methods and language	Team work, exercises, home work, reports, preparation and discussion of clinical cases Language: Italian and English Ref. Text books -Ralph E., Mc Donald, David R. Avery *"Odontoiatria per il bambino e l'adolescente*", 7° ed., Antonio Delfino Editore, 2002. -Campanella – M.R. Giuca – G. Marzo " *Le patologie cistiche in eta' pediatrica*" Delfino Editore, 2002. -G. Gallusi *" Compendio di odontostomatologia pediatrica"*, Piccin Editore, 1985. -K.D. Snawder *" Manuale di clinica pedodontica",*Scienza e Tecnica Dentistica – Ed. Internazionali s.n.c. Milano, 2000. -R. Gatto, *Lezioni di Pedodonzia,* Varesi Ed., 2014.
5	Assessment methods and criteria	Practical test and reports as integral part of the Oral exam on Module 1).
3) GENERAL AND SPECIALISTIC PEDIATRICS (3 ECTS)		
Teacher:Giovanni NIGRO		
1	Course objectives	Aim of this Module is to provide the students with knowledge of the basic principles of Pediatrics. The student will gainskills in identification and management of sick pediatric patients, in assessment and management of common pediatric problems,and in patient-doctor relationship (communication, ethics, role awareness) fundamental in the prevention and care of oro-dental diseases in pediatric age.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -Neonatal parameters, -Nutrition and growth, -Congenital and postnatal infections, -Respiratory, neurologic, oral and gastrointestinal diseases On successful completion of this module, the student should o have profound knowledge of pediatric elements in pathology and physiology, o haveknowledge and understanding of pediatric disease, o understand and explain preventive elements, o understand diagnostic elements, o demonstrate skill in diagnosis and ability in providingtherapy, o demonstrate capacity forreading and understand other texts on related topics.
3	Prerequisites and learning activities	Students must know Physiology and Pathology
4	Teaching methods and language	Lectures, team work, exercises, home work, report on clinical cases. Language:English Ref. Text books: -R. M. Kliegman, B. Stanton, R.E. Behrman, J. St. Geme, N. Schor, *Nelson Textbook of Pediatrics,* 19th Edition, Saunders-Elsevier, 2011.
5	Assessment methods and criteria	Written and oral exam, short reports.

Programme of "ORTODONZIA" ***"ORTODONTICS"*** **This course is composed of two Modules: 1) Orthodontics II, 2) Orthodontics II Traineeship.**
D3702, Compulsory **Single Second Cycle Degree in DENTISTRY, 4th year, 1stand 2ndsemester**
Number of ECTS credits: 10 (total workload is 250 hours; 1 credit = 25 hours)
1***) ORTHODONTICS (5 ECTS)***

Teacher:Claudio CHIMENTI		
1	Course objectives	The objective of thisModule is to give the student all the informations necessary to conduct a complete orthodontic diagnosis, starting with the collection of all diagnostic records, the meaning of pathology in orthodontics, the concepts of 'bone biology, tooth movement and orthodontic biomechanics, up to hint of therapy in orthodontics. The final learning Outcomes are: full autonomy of the student in making the diagnosis in Orthodontics and planning adequate treatment.
2	Course content and Learning outcomes (Dublin descriptors)	Topics of the module include: -The orthodontic problem: malocclusions and dentofacial anomalies -Development of orthodontic problems -Diagnosis and treatment planning -Biomechanics and mechanics -Fixed and removable appliances -Orthodontic treatment in preadolescent period -Overall orthodontic treatment in initial permanent dentition -Orthodontic treatment in adults On successful completion of this module, the student should o have profound knowledge of all the informationnecessary to conduct a complete orthodontic diagnosis with all diagnostic records, of the meaning of pathology in orthodontics, of the concepts of 'bone biology, tooth movement and orthodontic biomechanics and of therapy in orthodontics, o haveknowledge and understanding of: orthodontic malocclusions and dentofacial anomalies, development of orthodontic problems, Diagnosis and treatment planning , biomechanics and mechanics, fixed and removable appliances, orthodontic treatment in preadolescent period, in initial permanent dentition and in adults, o understand and explain a comprehensive orthodontic case, o demonstrate skill in the interpretation of all diagnostic records and ability to make a complete orthodontic diagnosis, o demonstrate capacity for reading and understand other texts on related topics about orthodontics, orthodontic diagnosis and orthodontic treatment plan, o apply all records for making an orthodontic diagnosis and set an orthodontic treatment plan, o analyze a comprehensive orthodontic case in all its aspects o evaluateall possible treatment plans for each orthodontic case in preadolescent, with mixed dentition or adult patients.
3	Prerequisites and learning activities	The student must know basic knowledge of anatomy, pathological anatomy, general pathology, microbiology, radiology, histology, physiology and biochemistry,physics special oral pathology, oral surgery, general surgery, endodontics, periodontology, maxillo facial surgery and otolaryngology. The successful completion of this Module requires the knowledge and skills provided in *Orthodontics I* . Both the course unit of "Orthodontics" and "Orthodontics II" provide a practical training with cephalometric analysis made by hand of the posterior-anterior and lateral radiographs in the classroom and clinical practice in the department.
4	Teaching methods and language	Lectures with ppt presentations and classroom exercises, team work, home work Language: Italian and English Ref. Text book: -William R. Proffit, Henry W. Fields, David M. Sarver, *Modern Orthodontics*, Edra Masson, 4th Edition, 2013. -Farronato G., "*Orthognathodontics*" VOL.1/VOL.2, 1st edition, Edi-Ermes, 2013.
5	Assessment methods and criteria	Written exam with quiz, and the succeful completion of the written exam leads to the practical test with Cephalometric Analysis of lateral and posterior-anterior radiographs and, finally, oral exam.
2) ORTHODONTICS TRAINEESHIP (1 ECTS)		
Teacher:Claudio CHIMENTI		
1	Course objectives	This Module provide the students with practical application of theoretical concepts learnt in Module 1). They will attend practical sessions in the Department and will learn how to produce and interpret data.
2	Course content and Learning outcomes (Dublin	Topics of the module include: -Discussion of clinical cases

	descriptors)	-Use of equipment and production of data -Treatment Planning Considerations On successful completion of this module, the student should o apply all records for making an orthodontic diagnosis and set an orthodontic treatment plan, o analyze a comprehensive orthodontic case in all its aspects, o evaluateall possible treatment plans for each orthodontic case in preadolescent, with mixed dentition or adult patients.
3	Prerequisites and learning activities	The student must know basic knowledge of anatomy, pathological anatomy, general pathology, microbiology, radiology, histology, physiology and biochemistry,physics special oral pathology, oral surgery, general surgery, endodontics, periodontology, maxillo facial surgery and otolaryngology. The Module provide a clinical practice with cephalometric analysis made by hand of the posterior-anterior and lateral radiographs in the department.
4	Teaching methods and language	Team work, practical experience Language: Italian and English Ref. Text book: -William R. Proffit, Henry W. Fields, David M. Sarver, *Modern Orthodontics*, Edra Masson, 4th Edition, 2013. -Farronato G., "*Orthognathodontics*" VOL.1/VOL.2, 1st edition, Edi-Ermes, 2013.
5	Assessment methods and criteria	Practical test of Cephalometric Analysis made by hand on lateral and posterior-anterior X-rays together with the Oral exam on the theoretical part.

Training Programme of "TIROCINIO I" ***"WORK PLACEMENT I"*** **This Traineeshipis composed of 5 Sections: 1) Restorative Dentistry, 2) Endodontics, 3) Pediatric Dentistry, 4) Prosthodontics, 5) Oral Surgery.**	
Compulsory **Single Second Cycle Degree in DENTISTRY, 6th year, 1stsemester**	
Number of ECTS credits: 23 (total workload is 575 hours; 1 credit = 25 hours)	
1) RESTORATIVE DENTISTRY ***Code: D3754, 5 ECTS***	
Teacher:Maria Chiara MARCI	
Training Objectives and Learning Outcomes	The training program includes topics such as treatment planning and smile design, composites (direct and indirect restorations), anatomical layering technique for frontal and posterior dentition, ceramic veneers, ceramic posterior restorations, esthetic fiber reinforced composite restorations, fiber posts, science of contemporary esthetic materials as well as periodontal esthetics. The students will acquire practical and technical skills for their professional life.
2) ENDODONTICS ***Code: D3756, 5 ECTS***	
Teacher: Anna Maria DIONISI	
Training Objectives and Learning Outcomes	The training program includes practical experience in all the pathological cases of Endodontic interest. The students will acquire practical and technical skills for their professional life.
3) PEDIATRIC DENTISTRY ***Code: D3758, 4 ECTS***	
Teacher: Roberto GATTO	
Training Objectives and Learning Outcomes	The training program includes practical experience needed to prevent, detect and treat abnormalities and children's diseases. The students will gain skills for diagnosis of major diseases, congenital or acquired, acute or chronic, with particular regard to caries, dental traumatology and the malocclusions. The training will enable the students to apply preventive measures for caries, periodontal disease and malocclusion and to perform surgical treatment.
4) PREVENTIVE AND COMMUNITY DENTISTRY ***Code: D3760, 4 ECTS***	

Teacher: Maria Chiara MARCI	
Training Objectives and Learning Outcomes	The training program includes practical experience in the application of protocols for preventing oral diseases in communities. The training will enable the students to identify and apply preventive measures in several contexts.
5) CLINICAL ODONTOSTOMATOLOGY ***Code: D3762, 5 ECTS***	
Teacher: Mario GIANNONI	
Training Objectives and Learning Outcomes	The training program includes practical experience in diagnosis and therapy of the main oral pathologies. The student will acquire skills and capacities for performing independent and professional activities.

Training Programme of "TIROCINIO II" ***"WORK PLACEMENT II"*** **This Traineeshipis composed of 5 Sections: 1) Periodontology, 2) Orthodontics and Gnathology, 3) Gnathology 4) Preventive and Community Dentistry, 5) Clinical Odontoistomatology**	
Compulsory **Single Second Cycle Degree in DENTISTRY, 6th year, 2nd semester**	
Number of ECTS credits: 23 (total workload is 575 hours; 1 credit = 25 hours)	
1) PERIODONTOLOGY ***Code: D3624, 5 ECTS***	
Teacher:Giuseppe MARZO	
Training Objectives and Learning Outcomes	The training program includes clinical training where the student will acquire proficiency in all diagnostic and therapeutic areas of Periodontology, including the surgicalaspects of implanttherapy. The student will be able to identify the therapeutic strategies for restoring the aesthetic and functional functions of the masticatory system in several cases.
2) ORTHODONTICS AND GNATHOLOGY ***Code: D3756, 5 ECTS***	
Teacher:Claudio CHIMENTI	
Training Objectives and Learning Outcomes	The training program includes practical experience in the conduct of cephalometric analysis, interpretation of the results of the cephalometric data and formulation of cephalometric diagnosis, which will be added to all diagnostic records needed for making the diagnosis in Orthodontics. The student will be able to make cephalometric analysis and interpret the results for the clinical practice.
3) GNATHOLOGY ***Code: D3766, 3 ECTS***	
Teacher: Annalisa MONACO	
Training Objectives and Learning Outcomes	The training program includes practical experience needed to clinical management of dysfunctional patient RDC axis/I and axis II. The students will perform Electromyography and kinesiography and interpret TENS. The training will enable the students to apply preventive measures for caries, periodontal disease and malocclusion and to perform surgical treatment.
4) PROSTHODONTICS ***Code: D3772, 5 ECTS***	
Teacher: Claudio RASTELLI	
Training Objectives and Learning Outcomes	The training program includes practical experience needed to make correct diagnosis of patients who require restoration of the integrity of the dental arches in order to plan and to build the related prosthetic rehabilitation. The training will enable the students to identify and apply autonomously the best measures and technologies adequate to the pathological status in several contexts.
5) ORAL SURGERY ***Code: D3778, 5 ECTS***	

Teacher: Claudia MAGGIORE	
Training Objectives and Learning Outcomes	The training program includes practical experience in diagnosis and therapy of the main oral pathologies. The student will acquire skills and capacities for performing surgical interventions for the treatment of the common pathologies of the oral cavity.