UNIVERSITY OF L'AQUILA

Department of Health, Life and Environmental Sciences

# 1st Cycle Degree in NUTRITION AND DIETETICS

## Laurea in DIETISTICA

# 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 1st Cycle Degree in NUTRITION AND DIETETICS | | | | |
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| **YEAR** | **CODE** | **COURSE** | **Credits (ECTS)** | **Semester** |
| I | D4181 | Biochemistry, Chemistry and Food Commodities | 9 | 1 |
| | D4183 | Statistical and Computer skills and Health Management | 16 | 1 |
| | D3977 | Basic Sciences | 7 | 1 |
| | D3839 | Physiology and Pathology | 6 | 2 |
| | D3840 | Human Nutrition | 6 | 2 |
| | D4079 | *Free choice courses* | 6 | 2 |
| | D4108 | *Other activities/courses:*<br>o *D4109 - Foreign Language/English, Level A2 (3 ECTS)*<br>o *D4110 - Other activities (Computer Sciences, Workshops, Seminars) (6 ECTS)*<br>o *D4111 - Professional Laboratories (3 ECTS)* | 12 | 2 |
| | D3638 | *Internship/Traineeship I* | 16 | 2 |
| II | D4187 | Food Safety | 6 | 1 |
| | D4189 | Health Services | 6 | 1 |
| | D0836 | Medical Sciences I | 10 | 2 |
| | D0856 | Medical Sciences II | 6 | 2 |
| | D3640 | *Internship/Traineeship II* | 32 | 2 |
| III | D4196 | Surgery Disciplines | 9 | 1 |
| | D3846 | Neurological and Psycho-behavioral Disciplines | 7 | 1 |
| | D0509 | Clinical Interdisciplinary Sciences | 8 | 2 |
| | D3642 | *Internship/Traineeship III* | 12 | 2 |
| | D2054 | *Thesis* | 6 | 2 |

**Programme of "BIOCHIMICA, CHIMICA E MERCEOLOGIA DEGLI ALIMENTI"**
***"BIOCHEMISTRY, CHEMISTRY AND FOOD COMMODITIES"***

**This course is composed of three modules: 1) Biochemistry, 2) Food Commodities, 3) Food Chemistry**

**D4181, COMPULSORY**
**First Cycle Degree in NUTRITION AND DIETETICS, 1st Year, 1st Semester**

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

## *1) BIOCHEMISTRY (3 ECTS)*

Teacher: Marco FERRARI

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| 1 | Course objectives | The objective of course is to introduce students to the basic concepts of biochemistry, providing a survey of the structure, function and reaction of major biological molecules. The course is designed to give the foundation for further study of physiology and pathology. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Human body composition;<br>- Biochemistry with particular reference to the biomolecules of interest in human nutrition<br>- Main carbohydrates in the diet (monosaccharides, disaccharides and polysaccharides)<br>- Proteins (structure and functions)<br>- Enzymes<br>- Major lipids in the diet<br>- Metabolism of carbohydrates (aerobic and anaerobic glycolysis; alcoholic fermentation and lactic acidosis; Krebs cycle; gluconeogenesis)<br>- Bioenergetics (oxidative phosphorylation)<br>- Lipid metabolism. Ketone bodies<br>- Metabolism of amino acids and proteins. Protein turnover. Urea cycle<br>- Metabolic changes in fasting - feeding cycle<br>- Distribution of energy reserves<br>- Free and bound water. Water activity. Minerals and vitamins<br>- Vegetable food: Cereals and flour. Fruits and vegetables. Dietary fiber and prebiotics.<br>- Olive and seed oils. Hydrogenated fats and margarines.<br>- Notes on the production of wine, beer and spirits.<br>- Food of animal origin. Meat. Milk, fermented milk, butter and cheese. Eggs. Fish products. Examination of the chemical transformations that occur during the preparation and storage of food (polymerization, oxidation, gelatinization, Maillard reaction, ecc.).<br>- Foods quality;<br>- Food storage processes,<br>- Nutrition risk<br>- Influence of storage and processing of food on the nutritional values of foods and dietary risk<br>On successful completion of this module, the student is expected to<br>o become familiar with the structure and function of carbohydrates, lipids, proteins and nucleic acids, and understand the cell metabolism and its regulation,<br>o be able to explain the structure, function and reaction of major biological molecules;<br>o demonstrate skills in applying knowledge properly with scientific reasoning ;<br>o acquire the ability for reading and understanding other texts on related topics and assess to what extent these are applicable to his field of interest. |
| 3 | Prerequisites and learning activities | The student must know general biology and chemistry |
| 4 | Teaching methods and language | Lectures<br>Language: Italian<br>Ref. Text books:<br>-Leuzzi Ugo, Bellocco Ersilia, Barreca Davide, *Biochimica della nutrizione*, Zanichelli<br>-Stefani , Taddei. *Chimica, Biochimica e Biologia Applicata*, Zanichelli.<br>- Cappelli P., Vannucchi V. "Chimica degli alimenti" Ed. Zanichelli, 2005 |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (90%) Continuous Assessment (10%) |

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| | | Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics. The questions aim to ascertain the achievement of the fundamental Learning Outcomes.<br>Continuous Assessment: the student must do exercises (2 x 5 marks each). |
| ***2) FOOD COMMODITIES (3 ECTS)*** | | |
| Teacher: Maria Marcella MATTEI | | |
| 1 | Course objectives and learning outcomes | Aim of this Module is to provide students with the basic knowledge of the properties of the major food components, and the effects of storage and processing on these components, ability to understand the production and processing of the main food commodities and of the principles of food production management and capacity to understand the relevance of composition to the properties of food commodities during storage and processing. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Course Content:<br>This module is focused on the knowledge and skills development of student nutritionists in relation to risks detection and assessment during food production and transformation.<br>In particular the student will learn:<br>- The properties of meat and fish, post mortem changes, texture and quality, preparation and processing of main end products.<br>- The structure and composition of eggs and the functional properties and preparation of egg products.<br>- Factors affecting the quality of milk and of the preparation of milk products; cheese, yoghurt, butter.<br>- The structure and quality of fruit and vegetables, post-harvest changes during storage and preparation of fruit and vegetable products.<br>- The structure of cereal grains and their milling and uses.<br>- The sources, refining and uses of sugars, oils and fats, and the production of a range of beverages.<br>- Health and safety and food hygiene regulations.<br>- Experience in food preparation processes.<br>- Market diversity and the use of novel processes.<br>- Development and compilation of menus for a variety of catering organizations.<br>- The selection and use of suitable equipment for large scale operations, the role of planning in management and aspects of quality control, financial control and management control.<br><br>On successful completion of this module, students should be able to:<br>o Know and describe the properties of food commodities including dairy products, meat, fruit and vegetables and cereals, and the factors affecting the quality of the produce.<br>o Know and describe the processes involved in the preparation of a range of food commodities for consumption.<br>o Know and describe large scale food production and service systems and their control mechanisms.<br>o Prepare food to a satisfactory standard, demonstrating an ability to plan menus appropriate to a range of market sectors.<br>o Identify the hygiene and basic legal requirements applicable to large scale food production systems (catering unit). |
| 3 | Prerequisites and learning activities | Prerequisites: none |
| 4 | Teaching methods and language | Weekly lectures with practical sessions to support the theory.<br>Language: Italian<br>Ref. Text books:<br>-Penfield, M.P. and Campbell, A.M., *Experimental Food Science*. London: Academic Press, 1990. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (90%) Continuous Assessment (10%)<br>Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics<br>Continuous Assessment: the student must provide practical reports based on the laboratory work (2 x 5 marks each). |

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| | ***3) FOOD CHEMISTRY (3 ECTS)*** | |
| Teacher: Giordana MARCOZZI | | |
| 1 | Course objectives and learning outcomes | This module deals with the structure and behaviour of water, fats, carbohydrates, proteins, natural pigments & artificial colourants, flavor compounds, additives, and vitamins in foods. Aim of this Module is to provide the students with knowledge of food components and capacity to discuss the structure and properties of various food constituents. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Course Content:<br>- Water and water activity in food.<br>- Fat in foods; physical and chemical properties, structure.<br>- Carbohydrates in foods; properties and structures.<br>- Protein in foods; structures and properties.<br>- Natural pigments and artificial food colourants.<br>- Flavour compounds; properties and categories.<br>- Food additives; categories and functions.<br>- Vitamins; stability, sources, structure.<br><br>On successful completion of this module, students should be able to:<br>o know and describe the structure and properties of some food constituents, both from a theoretical and practical perspective;<br>o understand the components of foods contributing to food functionality;<br>o understand the theory and practice of selected instrumental methods used in food analysis; produce accurate and critical reports;<br>o state the structures and discuss the properties of proteins, lipids and carbohydrates;<br>o discuss the effects of processing and storage on these components in foods;<br>o relate the composition of selected food commodities to their properties and changes during food processing and storage;<br>o undertake chemical analysis of foods, production and interpretation of reliable analytical results. |
| 3 | Prerequisites and learning activities | Prerequisites: none |
| 4 | Teaching methods and language | Lectures with audiovisual aids, demonstrations, self-study to include computational problems and literature searches. The students will apply many of the principles and techniques in the Food Chemistry practical course.<br>Language: Italian<br>Ref. Text books:<br>-deMan, John R, *Principles of Food Chemistry,* Kluwer Academic Publishers,1999<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%) Continuous Assessment (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics. The questions aim to ascertain the achievement of the fundamental Learning Outcomes.<br>Continuous Assessment: the student must provide practical reports based on the laboratory work . |

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| **Programme of "COMPETENZE STATISTICOINFORMATICHE E MANAGEMENT SANITARIO"**<br>***"STATISTICAL AND COMPUTER SKILLS AND HEALTH MANAGEMENT"***<br>**This course is composed of five modules: 1) Information Processing, 2) Medical Statistics, 3) Labor Law, 4) Business Organization, 5) Psychology of Organizations** |
| **D4183, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 1st Year, 1st Semester** |
| **Number of ECTS credits: 16 (workload is 400 hours; 1 credit = 25 hours)** |
| ***1) INFORMATION PROCESSING (3 ECTS)*** |
| Teacher: to be hired |

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| 1 | Course objectives | The objective of course is to introduce students to Information Processing Methodology, in order to turn information into valuable knowledge. The student will learn to apply the Information Processing Methodology by analyzing it in the context of the given examples and will gain a better understanding of how this methodology can be used to develop proficiency with processing information. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Basic overview of the hardware and software that will be utilized in Information Processing and terminology related to computers,<br>- The three basic steps in the information processing model,<br>- Elements of information processing,<br>- Inventory of recorded information,<br>- Organizing information and encoding large amounts of information,<br>- Semantic encoding,<br>- Organization and retrieval of information<br>- Dissemination of information<br><br>On successful completion of this module, the student is expected to<br><br>o develop an appreciation of the importance of the information processing cycle in many aspects of life and in society in general,<br>o have a general understanding of computer components for efficient use of computers,<br>o be able to perform a needs analysis, by explaining who needs the information, why it is needed, when it is needed, what the user will do with the information once it is received,<br>o be able to create a plan to collect the information from various sources,<br>o have the capacity to create a method for the evaluation of the quality of the information,<br>o demonstrate capacity to design a plan for storing and organizing the information that is collected,<br>o be able to retrieve the information, search for and collect the information.<br>o Be able to assess the process and the outcomes and determine if the needs have been met or not, and to redesign the process. |
| 3 | Prerequisites and learning activities | The student must know basic mathematics |
| 4 | Teaching methods and language | Lectures<br>Language: Italian<br>Ref. Text books:<br>Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%) Continuous Assessment (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics. The questions aim to ascertain the achievement of the fundamental Learning Outcomes.<br>Continuous Assessment: the student is periodically assigned exercises evaluated for the final mark. |
| ***2) MEDICAL STATISTICS (4 ECTS)*** | | |
| Teacher: Cinzia LEUTER | | |
| 1 | Course objectives and learning outcomes | This Module explains the main statistical methods and the basis of clinical research. It does not go into great detail about how to perform the myriad statistical tests available, since the goal is less on how to perform these tests, but rather on understanding a range of statistical methods for the analysis of medical data. One outcome is that students are comfortable *"speaking the language"* of statistics . |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Observational and experimental studies, statistical distributions.<br>- Means and their properties. How to measure the variability. Normal distribution.<br>- Rates and proportions, stressing the difference between prevalence ratio and incidence rate.<br>- How to measure the strength of the association between two variables, especially referring to the relationship between exposition to a risk factor and presence of a disease. |

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| | | - Introduction to probability and its applications in Medicine. Random sampling.<br>- Basic concepts of the Statistical Inference: parameter, estimator, standard error, confidence intervals, statistical tests. Statistical methods in clinical studies with respect to the phase.<br><br>On successful completion of the module, the student should:<br>o understand the role of laboratory testing in health care;<br>o understand the management of results and data from biological phenomena, and the study of the variability in individual observations with tables and graphics;<br>o perform analyses of data interpreting the obtained results;<br>o achieve ability in critically reading the results of a clinical study. |
| 3 | Prerequisites and learning activities | The student should have basic knowledge of Mathematics |
| 4 | Teaching methods and language | Lectures and seminars<br>Language: Italian/English<br>Ref. Text books:<br>- E. Ballatori, *Foundations of the Scientific Medicine* - Margiacchi-Galeno Ed. Perugia, 2006. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%) Formal written examination (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics. The questions aim to ascertain the achievement of the fundamental Learning Outcomes.<br>Written exam: 2-hours paper with multiple choice test, contributing to 40% of the total mark. |
| ***3) LABOR LAW (3 ECTS)*** | | |
| Teacher: Pietro LAMBERTUCCI | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to provide the students with the tools to examine, recognize and critique the regulation of subordinate work in the light of various judicial, doctrinaire and jurisdictional interventions.<br>On successful completion of this module, the student should understand the fundamental concepts of rights in the work place and should be aware of impact of community law in the subordinate work and the legal consequences of company crisis and reorganization |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Course Content:<br>- The constitution of subordinate work: placement of labour.<br>- The subordination, the autonomous work, the special work: distinction between subordination and autonomy; the collaboration; term contract.<br>- The professional classification: classification and tasks.<br>- The wages: principles constitutionally.<br>- The regulation of safety in the work place: article 2087 Civil code; mobbing<br>- Working rights: time, holiday, day off, festivity.<br>- The obligations: diligence and fidelity.<br>- The leading and disciplinary power: proceedings; sanctions; protections of wokers; disciplinary dismissal;<br>- The individual dismissal: justification of the dismissal; scope and protections.<br><br>On successful completion of this module, the student should<br>o have profound knowledge of the role of labour law in the State system;<br>o have knowledge and understanding of principal "phases" of subordinate work;<br>o understand and explain the meaning of powers of the employer;<br>o understand the fundamental concepts of forms of remuneration; obligations of the employee; termination of the employment relationship.<br>o demonstrate skill in legislative reasoning and ability to analyse concrete cases.<br>o demonstrate capacity for reading and understanding other texts on related topics. |
| 3 | Prerequisites and learning activities | Prerequisites: none |
| 4 | Teaching methods and language | Lectures.<br>Language: Italian<br>Ref. Text books |

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| | | -Pietro Lambertucci, ***Lineamenti di diritto del lavoro***, Libreria universitaria Benedetti, L'Aquila, 2008<br>-Handouts distributed by the teacher |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge by answering in half an hour to 4 questions on fundamental topics. The questions aim to ascertain the achievement of the fundamental Learning Outcomes. |
| ***4) BUSINESS ORGANISATION (3 ECTS)*** | | |
| Teacher: Michela D'AMICO | | |
| 1 | Course objectives and learning outcomes | This module deals with the theories and practices of services management and organization, focused on the health care sector. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Course Content:<br>- Company Organization Systems: theories and practices of services management and organization, focused on the health care sector,<br>- Organization theories: policy and politics perspectives of health care's three persistent issues: access, cost and quality;<br>- Organization models: analysis of healthcare professionalism model, focused on managerial competence (an overview of the business of health and how a variety of health care organizations have gained, sustained, and lost competitive advantage amidst intense competition, widespread regulation, high interdependence, and massive technological, economic, social and political changes),<br>- Evaluation of the challenges that health care organizations are facing, through competitive analysis (identification of their past responses and exploration of the current strategies they are using to manage these, and emerging ones challenges, more effectively),<br><br>On successful completion of this module, students should be able to:<br>have knowledge and understanding of the functioning of the Institutional Health Care System in the Italian economic-business. They should<br>o have profound knowledge of the Italian Healthcare system;<br>o have knowledge and understanding of the concepts, institutions, and issues specifically involved in the organization, financing and delivery of health services and products;<br>o demonstrate ability to critically examine the relative roles of private sector and public sector insurance and providers, and the effect of system design on cost, quality, efficiency and equity of medical services,<br>o be able to apply economics to an analysis of the health care industry,<br>o have profound knowledge of healthcare services delivering systems;<br>o have profound knowledge of entrepreneurship principles,<br>o develop a good understanding of core financial accounting and control principles e.g. double entry accounting, accruals, prepayments, liabilities, assets, duty segregation and the need for solid controls,<br>o gain competence in reading and understanding financial statements and develop a robust understanding of the work of management accounting, incorporating budget preparation, budget appraisal, costing, and financial appraisal techniques, |
| 3 | Prerequisites and learning activities | Prerequisites: none |
| 4 | Teaching methods and language | Lectures, Exercises: preparing processed through the analysis of specific projects.<br>Language: Italian<br>Ref. Text books:<br>-A. Zangrandi, ***Economia e management per le professioni sanitarie***, Mc Graw Hill, 2011.<br>-P.O. Achard, V. Castello, S., ***Profili Il governo del processo strategico nelle aziende sanitarie***, Franco Angeli, 2003. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%), Written text (40%) |

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| | | Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Written exam: is a multiple choice test aiming to ascertain the knowledge and understanding of fundamental topics. |
| ***5) PSYCHOLOGY OF ORGANISATIONS (3 ECTS)*** | | |
| Teacher: Dina DI GIACOMO | | |
| 1 | Course objectives and learning outcomes | The purpose of this module is to provide students with a broad overview of Organizational Psychology. It has been designed to help students develop a firm understanding into the field of Organizational Psychology by balancing its treatment of both practice and research. This model will equip students for their future careers in improving their understanding of people's behavior at work and in teaching them how to manage both themselves and others in the workplace. Students are expected to attend lectures, engage in group work, prepare for and contribute to class discussions. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Organizational Psychology is the application of social science methods and principles to industrial and organizational behavior.<br>Topics include:<br>- teams in organizations,<br>- motivation, individual differences,<br>- attitudes and emotions relevant to work,<br>- stress and well-being, fairness and diversity within organizations,<br>- leadership and organizational change and development.<br><br>On successful completion of this module, students should be able to:<br>o Understand why psychologists study the behavior of workers and organizations, and how this study has contributed to both our understanding and practice of work.<br>o Increase critical thinking by carefully examining the methodology and results of empirical research,<br>o Explain the application of relevant psychological theory and research problems faced by employees and organizations,<br>o Use psychological theory and research to support possible solutions to organizational problems.<br>o Apply psychological theories and concepts to problems and questions they find personally important,<br>o Recognize and understand the complexity of cultural diversity,<br>o Understand and apply basic research methods in psychology and the social sciences.<br>o Evaluate and apply current psychological theory and research to organizational settings and problems. |
| 3 | Prerequisites and learning activities | Prerequisites: none |
| 4 | Teaching methods and language | Students are expected to attend lectures, engage in group work, prepare for and contribute to class discussions.<br>Language: Italian<br>Ref. Text books:<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

| **Programme of "SCIENZE DI BASE"**<br>***"BASIC SCIENCES"*** |
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| **This course consists of two modules: 1) Human Anatomy, 2) Psychobiology** |
| **D3977, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 1st Year, 1st Semester** |
| **Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)** |

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| ***1) HUMAN ANATOMY (3 ECTS)*** | | |
| Teacher: Maria Adelaide CONTINENZA | | |
| 1 | Course objectives | The course aim is to provide knowledge of the general and structural organization of various human organ systems and theoretical concepts regarding the main morpho-functional relationships. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Overview of the human body and anatomic nomenclature.<br>- Musculoskeletal system: Head (external skull, intracranial regions),Vertebral column, Chest, Pelvic girdle, Upper and lower limb.<br>- Cardiovascular system: mediastinum, heart and great vessels. Overview of lymphatic system.<br>- Respiratory system: Upper airways, trachea and bronchi. Lungs and Pleura.<br>- Overview of Digestive system.<br>- Urogenital system: Kidney and urinary tree. General aspects of female and male reproductive systems.<br>- Endocrine system.<br>- Nervous system: spinal cord and spinal nerves. Brain stem. Cerebellum. Diencephalon. Cerebral hemisphere. Cranial nerves.<br>- Special senses: external, middle and inner ear. The eye. The orbit and accessory visus apparatus.<br><br>On successful completion of this module, the student should<br>o have profound knowledge of gross and functional anatomy of the musculoskeletal system and nervous system;<br>o have knowledge and understanding of different human body systems;<br>o demonstrate the ability to recognize the anatomical peculiarities of musculoskeletal system (i.e. external skull, intracranial regions, vertebral column, chest, pelvic girdle, upper and lower limb) on human anatomy models;<br>o demonstrate capacity for reading and understanding other texts on related topics. |
| 3 | Prerequisites and learning activities | The student must know the basic structure and function of cells and integrating cells into tissues. |
| 4 | Teaching methods and language | Lectures, team work, home work.<br>Language: Italian<br>Ref. Text books:<br>- Anatomia dell'uomo. AA.VV, Edi-Ermes, 2006.<br>- Anatomia Umana e Istologia. Carinci, Gaudio, Marinozzi. Elsevier, 2008.<br>- Anatomia Umana. Atlante. Volume 1. Anastasi, Tacchetti et al. Edi Ermes, 2006. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***2) PSYCHOBIOLOGY (4 ECTS)*** | | |
| Teacher: Dina DI GIACOMO | | |
| 1 | Course objectives and learning outcomes | This module aims to introduce students to the core areas of Biological Psychology as set-out in the Italian Psychological Society syllabus |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Historical key issues and methods in the neurosciences<br>- Structure and functions of the CNS<br>- Neuronal communication<br>- Psychopharmacology and drug action<br>- The psychobiological aetiology of schizophrenia and depression<br>- The psychobiology of post-traumatic stress disorder<br>- Drugs of abuse<br>- Learning and Memory<br>- Eating behaviour and Eating disorders<br>- Reinforcement and Addiction<br>- Emotions<br>- Stress and Psychoneuroimmunology |

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| | | - Reproductive Psychology<br>- Behavioral genetics and Evolutionary Psychology<br><br>On successful completion of this module, the student should<br>o Demonstrate a comprehensive understanding of both functions underpinning biological explanations of behavior and mechanisms underpinning perception, memory, language, problem solving, and other cognitive abilities.<br>o Demonstrate an advanced knowledge and critical awareness of the biological and cognitive processes underlying normal and abnormal behavior.<br>o Explain and evaluate key theories and debates within the field of biological and cognitive psychology<br>o Appreciate the value of integrating the cognitive and the biological approaches to the study of human behavior. |
| 3 | Prerequisites and learning activities | The student must know central nervous system structure and function, preliminary notions of developmental and general psychology. |
| 4 | Teaching methods and language | Lectures.<br>Language: Italian.<br>Ref. Text books:<br>- Carlson, *Fisiologia del comportamento*, Piccin (2008) |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| **Programme of "FISIOLOGIA E PATOLOGIA"**<br>***"PHYSIOLOGY AND PATHOLOGY"***<br>**This course consists of three modules: 1) Human Physiology, 2) General Pathology I, 3) General Pathology II** | | |
| **D3839, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 1st Year, 2nd Semester** | | |
| **Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)** | | |
| ***1) HUMAN PHYSIOLOGY (3 ECTS)*** | | |
| Teacher: Maria Giuliana TOZZI | | |
| 1 | Course objectives | The goal of this course is to provide the student with the fundamentals on the human body functions. On successful completion of this module, the student should understand the functioning of the major physiological organ systems: cardiovascular, respiratory, renal, neural and gastrointestinal; as well as basic concepts of general physiology |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>Introduction and General Physiology: Levels of organization of tissue, organs and organ systems of the body. Function and regulation of the human body fluids, composition of body fluids, membrane transports. Omeostasis and physiological integration of the organ systems to maintain homeostasis<br>Cellular Neurophysiology: The fundamental mechanisms of action potential propagation, synaptic transmission, and receptor potential generation<br>Nervous System, Sensory Physiology and Efferent Nervous System: The Nervous System organization. The general properties of sensory systems. The somatic senses. The macro and microscopic structure of muscle. The events involved with muscle contraction and relaxation in response to an action potential. The three levels of nervous control of the body movement: the spinal cord, the brain stem, the cerebral cortex level.<br>Cardiovascular Physiology: The cardiac performance, and the cellular, ultrastructural and molecular bases of normal cardiac function and myocardial blood flow. Different regional circulations. Neuronal, humoral and local mechanisms of regulation of organ blood flow. Mechanisms of regulation of vascular smooth muscle contractility. Influence of the endothelium on vascular tone and reactivity on local blood flow regulation.<br>Renal Physiology: Control of the volume and composition of body fluids attributed to kidney functions. Control of glomerular filtration; nephron function; transport of fluid, electrolytes and organic molecules; endocrine regulation of the kidney. |

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| | | Respiratory Physiology: Functioning of the pulmonary system in physiological conditions through the understanding of the gas laws within the body. The process of ventilation and gas exchange in the lungs. Volumes and pulmonary capacities. Gases transportation. Ventilation and its control.<br><br>On successful completion of this module, the student should:<br>o have knowledge of the essential concepts of physiology and mechanisms of body function at various levels of organization, ranging from cellular and molecular to tissue and organ system levels.<br>o understand the integrated regulation of various body processes among the body organ,<br>o understand the means by which the various organ systems of the human body operate and how these functions are integrated<br>o demonstrate skill in analysing the effects of environmental variability of the organ systems of the human body,<br>o demonstrate capacity to apply the compiled information to clinical or research situations. |
| 3 | Prerequisites and learning activities | The student must have the basic physical notions as acquired in the secondary Schools |
| 4 | Teaching methods and language | Lectures.<br>Language: Italian<br>Ref. Text books:<br>- L. Zocchi *"Principi di Fisiologia*", Edises. 2012.<br>- Stanfield, Germann *"Fisiologia",* Edises. 2011.<br>- M. Midrio *"Compendio di Fisiologia Umana*", Piccin. 2012 |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***2) GENERAL PATHOLOGY I (2 ECTS)*** | | |
| Teacher: Maria Grazia CIFONE | | |
| 1 | Course objectives and learning outcomes | The goal of the module is to provide the student with the necessary knowledge for understanding the manifestations of the disease, its process and sequelae, its possible cause (etiology) and the underlying the mechanisms (pathogenesis). |
| 2 | Course content and Learning outcomes (Dublin descriptors) | The General Pathology Module deals with how tissues respond to injury, cell death, inflammation, ischemia, thrombosis, embolism, infarction, and so forth. It also deals with response to infections, environmental pollutants, and disease states related to abnormal immune responses. Mechanisms of tumor development and how tumors spread are studied under "neoplasia."<br>Topics of the Module include:<br>- The immune response: innate immunity and inflammatory response, antigens and antibodies, cell mediate immunity, ipersensitivity Ipersensitivity diseases<br>- Immune deficiency: general aspects of the syndrome<br>- Mutations and Neoplastic degeneration<br><br>On successful completion of this module, it is expected that the student should:<br>o Have acquired knowledge of the disease starting and the body response to the infections and to the antigen contacts.<br>o Demonstrate knowledge of the allergic response<br>o Understand and explain the neoplastic degeneration<br>o demonstrate the ability to identify and explain the etiology, pathogenesis, gross and microscopic appearances, relevant laboratory investigations, complications and the usual outcome of common diseases.<br>o Be able to correlate the important clinical features of the disease with the pathologic changes.<br>o Be able to use the new terminology learnt in pathology in the appropriate context.<br>o Develop study techniques for self-learning to achieve the learning objectives for each lesson utilizing the lecture handouts, textbooks and other web based resources.<br>o Be able to provide a good description of the morphology of lesions. |

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| | | o Demonstrate capacities to analyse and interpret clinical data with links to basic sciences. |
| 3 | Prerequisites and learning activities | The student must know Cell Biology, Anatomy, Chemistry and Biochemistry |
| 4 | Teaching methods and language | Teaching methods: Lectures and practical experience in lab<br>Language: Italian/English<br>Ref. Text books:<br>– All books of General pathology are good |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***3) GENERAL PATHOLOGY II (1 ECTS)*** | | |
| Teacher: Marie Lise JAFFRAIN | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to provide the student with the tools and knowledge needed to understand, describe and recognize the causes and determinants of the pathogenic mechanisms of patients diseases. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>Cell damage and death, inflammation, fever, atherosclerosis, ischemic heart disease, hepatitis, hepatic cirrhosis, genetic disease, multisystem diseases, cellular transformation and tumor progression.<br><br>On successful completion of this module, the student should:<br>o know and understand the concept of "cause" in pathology.<br>o Apply knowledge and understanding in the description of the main patterns of pathological cellular processes common to many types of diseases.<br>o be able to recognize the main patterns of pathological cellular processes common to many types of diseases.<br>o be able to illustrate the mechanisms of interaction between external agents and the living organism to patients and other health care professionals.<br>o demonstrate capacities to continue learning by assessing his/her own knowledge needs and then to guide own future learning in these topics. |
| 3 | Prerequisites and learning activities | The student must have the knowledge of the fundamentals of cell biology, biochemistry, genetics, anatomy and histology. |
| 4 | Teaching methods and language | Lectures, team work.<br>Language: Italian.<br>Ref. Text books:<br>G.M. Pontieri "*Elementi di Patologia Generale*" (per i Corsi di Laurea Professioni Sanitarie). Piccin ed. 2011. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

## Programme of "NUTRIZIONE UMANA E PRINCIPI DI DIETETICA"
## *"HUMAN NUTRITION"*

**This course consists of two modules: 1) Applied Nutrition I, 2) Physiology of Nutrition**

**D3840, COMPULSORY**
**First Cycle Degree in NUTRITION AND DIETETICS, 1st Year, 2nd Semester**

**Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25 hours)**

## *1) APPLIED NUTRITION I (3 ECTS)*

Teacher: Maria Marcella MATTEI

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| 1 | Course objectives | The aim of this module is to promote a scientifically rigorous approach to the study of the role of diet and activity in human health. Through the study of the legislative and policy issues such as the role of health and nutrition claims, as well as national and international dietary standards, an appreciation of the role of nutrition in population health will be gained. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- National and international dietary standards and guidelines, rationale and comparative approach.<br>- Factors affecting food selection; social, cultural, individual; dietary taboos, including GM foods.<br>- Nutrition in exercise and sport.<br>- Food additives. Toxic aspects of food. Food chemical intake assessment.<br>- Legislative and policy issues, including good manufacturing practice, labelling, health claims, food fortification, novel foods, nutriceuticals.<br>- Special topics of current importance.<br>- Practical (lab-based) work on measures of nutritional status including dietary, anthropometric, clinical, biochemical.<br><br>On successful completion of this module, the student should be able to:<br>o Demonstrate knowledge of various dietary recommendations and guidelines.<br>o Show an appreciation of the non-nutrient factors affecting dietary intake.<br>o Describe the mechanisms by which diet may influence sporting performance.<br>o Critically interpret data relating diet and activity to health outcomes.<br>o Describe the legislation which surrounds policy issues with respect to food labelling, nutrient claims and health claims.<br>o Perform laboratory and clinical methodologies used in the assessment of nutritional status including dietary anthropometric, clinical, biochemical. |
| 3 | Prerequisites and learning activities | The student must have the basic physical notions as acquired in the secondary Schools |
| 4 | Teaching methods and language | Lectures; Practical and laboratory work; Self-directed learning.<br>Language: Italian<br>Ref. Text books:<br>- Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (40%), Continuous Assessment (60%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment, Nutrition Assignments: 30%<br>Continuous Assessments, Lab Notebooks: 30% |
| ***2) PHYSIOLOGY OF NUTRITION (3 ECTS)*** | | |
| Teacher: Maria Giuliana TOZZI | | |
| 1 | Course objectives and learning outcomes | In this subject students examine physiology pertinent to the study of human nutrition. The subject relies on a basic understanding of human anatomy and physiology and extends students understanding of relevant topics with appropriate pathophysiological examples. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Functional anatomy and physiology of the gastrointestinal system and accessory organs, including mechanical & chemical digestion, absorption and pancreatic, liver and biliary system function;<br>- Control of gastrointestinal secretion and motility (via hormones & neural reflexes);<br>- Olfaction, taste, thirst, hunger and appetite;<br>- Selected gastrointestinal pathophysiology and related conditions;<br>- Renal physiology including fluid, electrolyte and acid-base balance and excretion.<br>- Renal pathophysiology including nutritional implications of renal failure<br>- Energy balance, weight control and body composition assessment;<br>- Altered nutritional physiology under "stress" conditions including exercise and overnutrition (obesity);<br>- Interactions between nutrition and immune function;<br>- Physiological considerations in sports nutrition (such as hydration, replenishment and ergogenic aids); |

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| | | - Current issues in nutrition (such as anaemia and skeletal health).<br><br>On successful completion of this module, it is expected that the student should be able to:<br>o Describe in detail the function of the gastrointestinal system;<br>o Discuss the regulatory mechanisms that control the gastrointestinal system;<br>o Understand and explain the physiological and nutritional mechanisms controlling appetite and thirst;<br>o Describe in detail the nutritionally related functions of the renal system;<br>o Analyse and discuss some of the more important nutritionally related patho-physiological conditions;<br>o Describe the changed nutritional physiology under conditions of stress such as exercise and over-nutrition;<br>o Rationalise the various theoretical and practical aspects of energy balance and body composition assessment.<br>o Describe the inter-relationship between nutrition and immune function;<br>o Discuss the physiological basis of selected current issues in nutritional physiology. |
| 3 | Prerequisites and learning activities | The student must know Cell Biology, Anatomy, Chemistry and Biochemistry, Physiology |
| 4 | Teaching methods and language | Lectures and practical experience in lab<br>Language: Italian/English<br>Ref. Text books:<br>– Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%), Continuous Assessment (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment, Nutrition Assignments: 30%<br>Continuous Assessments, Lab Notebooks: 10% |

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| **Programme of "CONTROLLO DI PRODUZIONE E SICUREZZA ALIMENTARE"<br>"*FOOD SAFETY*"<br>This course consists of two modules: 1) Food Hygiene, 2) Food Microbiology** | | |
| **D4187, COMPULSORY<br>First Cycle Degree in NUTRITION AND DIETETICS, 2nd Year, 1st Semester** | | |
| **Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25 hours)** | | |
| ***1) FOOD HYGIENE (3 ECTS)*** | | |
| Teacher: to be hired | | |
| 1 | Course objectives | This subject introduces student to food safety issues in the hospitality industry. The goal is to provide students with theoretical knowledge and practical skills to prevent food contamination throughout the food production and service processes. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Food Safety and Sanitation Management ( the importance of food safety and sanitation as the basis for<br>- preventing foodborne illness in retail food establishments),<br>- Hazards to Food Safety (examples of each of the three main types of foodborne hazards),<br>- How infections, intoxications, and toxin-mediated infections cause foodborne illness,<br>- Factors that promote bacterial growth in foods, the role of temperature<br>- Factors that Affect Foodborne Illness<br>- How to improve personal hygiene habits to reduce the risk of foodborne illness,<br>- Procedures and methods to prevent cross- contamination of food,<br>- The Food Product Flow<br>- Hazard, Hazard Analysis, Critical Control Point and Critical Limit.<br>- Developing and Managing A Food Safety Plan<br>- Cleaning and Sanitizing Operations<br>- Environmental Sanitation and Maintenance |

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| | | On successful completion of this module, the student should be able to:<br>o demonstrate specialized technical knowledge and understanding of food hygiene and safety practices within an international hospitality setting.<br>o appraise and respond to food hygiene problems and apply safety practices to achieve sanitation standards in food operations.<br>o develop and manage a food safety and sanitation programme that adheres to Food and Environmental Hygiene Department (Standards for Italian Government )<br>o communicate and react proactively to the stakeholders in the hospitality industry in the areas of food hygiene and safety. |
| 3 | Prerequisites and learning activities | The student must have the basic notions of Chemistry and Physics. |
| 4 | Teaching methods and language | Lectures; Practical and laboratory work; Self-directed learning.<br>Language: Italian<br>Ref. Text books:<br>- Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%), Continuous Assessment (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment: paper report on research work. |
| ***2) FOOD MICROBIOLOGY (3 ECTS)*** | | |
| Teacher: Anna TOMEI | | |
| 1 | Course objectives and learning outcomes | This module provides the students with basic information on the nature of microorganisms and food-borne diseases and their significance to the food industry and society. To provide practical experience of working with microorganisms in the laboratory. The module will emphasize the ecologies of the microbes and relate the ecologies to approaches used in the control of food spoilage and of food borne illness. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Properties of biological systems; morphology, structure and function of bacteria, fungi and viruses; cultivation of micro-organisms,<br>- Factors affecting the type and rate of microbial food spoilage; microbial growth in batch culture; effects of environment on microbial growth,<br>- Assessment of microbial floras of foods; direct and indirect methods; total and viable counts; biomass and activity determinations; selection of appropriate method,<br>- Ecology of food-borne diseases; food intoxications; food infections,<br>- Prevention and control of microbial food spoilage; hygiene, good manufacturing practice; food preservation; food fermentation; predictive microbiology,<br>- Making foods with microorganisms.<br><br>On successful completion of this module, it is expected that the student should be able to:<br>o describe the basic properties of bacteria, fungi, viruses and prions,<br>o identify an organism as a bacterium, yeast or mould in the laboratory,<br>o select appropriate method(s) for assessing the microbial flora of foods,<br>o evaluate the results of microbiological tests in relation to the nature of the food and its previous history,<br>o describe the effects of environmental conditions on microbial growth and food spoilage,<br>o describe methods of food preservation,<br>o describe measures for the control of food poisoning bacteria.<br>o demonstrate skills in: making accurate observations; recording accurately what was done; interpreting observations and data; communicating orally and in writing; working in a team. |
| 3 | Prerequisites and learning activities | The student must know basic notions of Chemistry, Biology. |
| 4 | Teaching methods and language | Lectures; Laboratory classes; Revision tests<br>Language: Italian/English<br>Ref. Text books:<br>– Teacher's Notes |

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| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (60%), Continuous Assessment (40%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment: paper report on research work. |

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| **Programme of "SERVIZI SANITARI"**<br>***"HEALTH SERVICES"***<br>**This course consists of two modules: 1) Radiation Protection, 2) Community Nutrition** | | |
| **D4189, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 2nd Year, 1st Semester** | | |
| **Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25 hours)** | | |
| ***1) RADIATION PROTECTION (3 ECTS)*** | | |
| Teacher: Ernesto DI CESARE | | |
| 1 | Course objectives | This Module aims to provide the students with a level of understanding sufficient to enabling them to properly identify the existence, magnitude of potential hazard and potential significance of any radiation hazard and to implement appropriate agreed protocols for dealing with such events by involving external experts/consultants when required. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module:<br>- Basic concepts of ionising radiation<br>- Radiation quantities and units<br>- Radiation hazards – Health effects, Doses in perspective<br>- Radiation measurement - Use of EPD / dose rate and contamination monitor, Relevance of measurement results<br>- Radiation uses<br>- Practical protection: Protection from internal exposures, Protection from external exposures, Accident case histories;<br>- National and European Regulation and Supporting Schemes: Overview of Italian Regulation;<br>- Dose limitation (Occupational, Emergency, Patients and carers), Key requirements;<br>- Hazard Recognition and Situation Analysis (medical incidents: Foreseeable, mitigation, consequences, Civil nuclear incidents: Nuclear emergency plans, Possible scenarios).<br><br>On completion of the training candidates should:<br>o Understand the nature and properties of ionising radiation<br>o Be familiar with terminology used in radiation protection<br>o Be aware of and understand the potential hazards associated with ionising radiations and have an understanding of the concept of ALARP (As Low As Reasonably Practicable), one of the fundamental principles of risk management<br>o Understand the basic principles of practical protection<br>o Have a general awareness of the range of applications of ionising radiation in medicine<br>o Have an awareness of the categories of possible radiation incidents – industrial, nuclear, malicious (CBRN ) etc. and their likely consequences<br>o Understand how radiation measurements can be made in the field and know how to use, and interpret results obtained from, instrumentation available to the ambulance trusts.<br>o Know and be familiar with agreed national strategy/protocols for dealing with radiation incidents and understand the importance of adhering to specified procedures. |
| 3 | Prerequisites and learning activities | The student must have the basic mathematical notions and methods as acquired in the secondary schools |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work<br>Language: Italian/English<br>Ref. Text books :<br>E. di Cesare, P Gallicchi, M Midiri "*La Radioprotezione Negli Studi Radiologici*", ed Gnocchi, 2010 |

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| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal written Examination (100%)<br>Written exam: 2-hour Multiple choice test on the main radioprotection rules and safety protocol application. |
| ***2) COMMUNITY NUTRITION (3 ECTS)*** | | |
| Teacher: Maria Marcella MATTEI | | |
| 1 | Course objectives and learning outcomes | This module provides the students with basic information on malnutrition problems and their connection with socioeconomic status and cultural practices usually shared by many individuals in a given community. The Module will explain how dealing with community nutrition problems through a preventive approach will have more long-term benefits than managing individual cases of malnutrition, and therefore how a nutrition health worker should spend most of his/her time in dealing with the prevention of nutritional problems at the community level. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Community-structure and workings<br>- Definition of community<br>- Community hierarchies, dynamics and organization<br>- Concepts of community nutrition<br>- Importance of community participation in nutrition programs<br>- Essential considerations in working with community<br>- Nutrition intervention approaches<br>- Intrasectoral collaboration/coordination in implementing nutrition activities<br>- Identification of nutrition interventions at household and community levels<br>- Primary health care and health for all<br>- Historical background and rationale for primary health care<br>- Primary health care components<br>- Primary health care strategies<br>- Primary health care approaches to nutrition<br>- Strategies for household food security<br>- Home level (Efficient use of available resources to improve food supply,<br>- Appropriate storage, simple home food processing and preservation technologies )<br>- Community level (Activities to improve food storage, Community organization for health and nutrition education, Health services, Technical and logistic support to facilitate work at home and communal level)<br><br>On successful completion of this module, it is expected that the student should be able to:<br>o Know and discuss major concepts, principles and approaches to community nutrition<br>o Know and outline the basis, techniques, advantages and shortcomings of different anthropometric measurements used for nutrition assessment<br>o Use dietary assessment and qualitative methods to determine community nutrition problems and needs<br>o Design and implement a system for surveillance of community nutrition<br>o Outline the principles of infant and child nutrition and the essential nutrition interventions<br>o Outline the important principles and approaches to maternal nutrition during pregnancy and lactation<br>o Outline the major community nutrition interventions other than those directed at maternal and child nutrition problems |
| 3 | Prerequisites and learning activities | The student must know basic notions of Chemistry, Biology. |
| 4 | Teaching methods and language | Lectures; Laboratory classes; Revision tests<br>Language: Italian/English<br>Ref. Text books:<br>– Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%) |

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| | | Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| **Programme of "SCIENZE MEDICHE I"**<br>***"MEDICAL SCIENCES I"***<br>**This course consists of four modules:**<br>**1) Endocrinology, 2) Applied Nutrition II, 3) Principles of Clinical Medicine, 4) Principles of Pharmacology** | | |
| **D0836, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 2nd Year, 2nd Semester** | | |
| **Number of ECTS credits: 10 (workload is 250 hours; 1 credit = 25 hours)** | | |
| ***1) ENDOCRNOLOGY (3 ECTS)*** | | |
| Teacher: Felice FRANCAVILLA | | |
| 1 | Course objectives | The Module provides an overview of how the endocrine system synthesizes and releases chemical messengers (hormones), to maintain tight homeostatic control of physiological processes in the face of changes to the internal and external body environment. The student will learn about the structure and function of the key endocrine tissues, together with the actions and interactions of their hormonal products. The student will study the endocrine regulation of a variety of parameters including growth, appetite, blood sugar levels, stress, male and female fertility, pregnancy, puberty, and calcium balance. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module:<br>- Hypoglycemia<br>- Diabetes mellitus<br>- Ketoacidosis<br>- Cushings disease<br>- Hyperosmolar state<br>- Addisons disease<br>- Hypthyroidism<br>- Testicular failure<br>- Hyperthyroidism<br>- Syndrome of inappropriate ADH secretion<br>- Thyroid nodules<br><br>On completion of the training candidates should:<br>o understand the function of the endocrine organs, metabolism of their hormones, and their effects on the body.<br>o understand the pathogenesis and pathophysiology of diseases of the pituitary, thyroid, parathyroid, adrenal, pancreas (endocrine), testes, and ovary.<br>o be able to interpret the results of measurements of stimulation and suppression of glands.<br>o know the pharmacology and use of insulin, thyroid hormones, corticosteroids, androgens, estrogens, vasopressin, and other agents.<br>o be able to interpret special procedures for visualization, scans, ultrasonography for tumor and organ visualization.<br>o be familiar with principal issues in diabetes management, including use and rational dosing of modern insulins, indications for use of insulin pumps, use of newer oral hypoglycemic and insulin sensitizing agents, foot care, and management of complications. |
| 3 | Prerequisites and learning activities | The student must have the basic notions of Anatomy and Physiology |
| 4 | Teaching methods and language | Didactic methods to achieve required objectives include: • Reading assignments • Lectures • Student attendance at/participation in formal clinical presentations by medical faculty<br>• Assigned, case-oriented reading case presentations<br>Language: Italian/English<br>Ref. Text books :<br>Kasper, et al (Eds), Harrison's , *"Principles of Internal Medicine",* 17th Ed., McGraw-Hill, 2008. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated |

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| | | also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***2) APPLIED NUTRITION II (3 ECTS)*** | | |
| Teacher: Maria Giuliana TOZZI | | |
| 1 | Course objectives and learning outcomes | This Module explores the application of nutrition principles to the treatment and prevention of diseases. This treatment can range from changes in diet to providing specialized therapies such as intravenous or tube feeding. Discusses lifestyle strategies and therapeutic nutrient intervention to correct nutritional insufficiencies; promote optimal health; and prevent, manage, or correct medical problems. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Nutritional assessment methods; anthropometry, dietary intake studies, biochemical analysis.<br>- Early determinants of adult disease.<br>- Nutrition and healthy aging.<br>- Food allergies.<br>- Energy balance obesity and underweight.<br>- Nutritional requirements throughout the life cycle.<br>- Recommended dietary allowances, dietary goals and guidelines; Nutrition labelling.<br>- Role of nutrition in the prevention of chronic non-communicable disease (e.g. cardiovascular disease, cancer, osteoporosis, diabetes, stroke).<br>- National and international trends in food and nutrient consumption and chronic disease incidence.<br>- Health claims legislation.<br><br>On successful completion of this module, it is expected that the student should be able to:<br>o Describe the use of Medical Nutrition Therapy.<br>o Recognize, define, and use proper medical terminology.<br>o Describe the effects of various illnesses on nutrition status.<br>o Understand the etiology and symptoms of various diseases in which nutrition intervention is needed.<br>o Compare and contrast methods for gathering food intake data.<br>o Identify anthropometric measurements commonly used to monitor growth and development in both children and adults.<br>o Describe the methods used for nutritional assessment at both the individual and population level.<br>o Describe the concept of energy balance and the factors that contribute to overweight, obesity and under-nutrition.<br>o Explain the concepts of recommended dietary allowances, dietary goals and guidelines.<br>o Outline the changes in nutritional requirements that take place during the life cycle<br>o Critically evaluate the role of good nutrition in the prevention of chronic disease.<br>o Develop and implement appropriate nutrition care plans.<br>o Identify the components to consider with planning long-term dietary interventions. |
| 3 | Prerequisites and learning activities | Before enrolling in this course, students should have completed coursework in human biology, chemistry, anatomy, physiology, and basic nutrition |
| 4 | Teaching methods and language | This course will be employ a variety of methods for enhancing learning and understanding of applied nutrition, these include readings of books and articles, group discussion, case studies and tests.<br>Language: Italian/English<br>Ref. Text books:<br>– Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***3) PRINCIPLES OF CLINICAL MEDICINE (3 ECTS)*** | | |

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| Teacher: Ivano TESTA | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to provide the fundamentals of Internal Medicine, through the study in depth of the major diseases and their signs and symptoms. Lectures and simulated clinical scenarios will enable the student to learn and acquire advanced skills and ability for evaluation and interpretation of symptoms on the management of acute and chronic health problems. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Medical care to the patient. Rheumatic and autoimmune diseases. Allergies.<br>- Medical emergencies and anaphylactic shock.<br>- Osteoporosis, osteoarthritis and chronic inflammatory diseases of the elderly. Lymphadenopathy and fever. Hematopoiesis and hematologic abnormalities<br>- Endocarditis and sepsis. Hypertension, diabetes and cardiovascular diseases.<br>- Dyspnea and heart failure. Respiratory failure. Renal failure.<br><br>On successful completion of this module you should be able to:<br>o Demonstrate the knowledge and undertanding of the fundamentals of Internal Medicine and of the role of nurse in patient's care.<br>o Demonstrate the application of nursing knowledge and skills in the assessment and management of patients under treatment in Internal Medicine Departments.<br>o Critically evaluate clinical signs of the main dysfunctions and early warning signs.<br>o be able to implement nursing care planning starting from the patient medical diagnosis.<br>o be able to explain to the patients and to other professionals the signs and symptoms of the main diseases.<br>o Critically analyse current Internal Medicine nursing practice in the medical setting.<br>o Evaluate the role of the nurse in the prevention of main diseases.<br>o be able to develop and deepen knowledge in the field of internal medicine nursing on the level of expertise |
| 3 | Prerequisites and learning activities | The student must have the basis of human physiology and anatomy. |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work.<br>Language: Italian.<br>Ref. Text books:<br>R. Massini, C. Longhi, P. Marchetti, F. Passeretti, A. Pelosio, U. Recine *"Medicina Interna 3"*, Editore *MCGRAW- HILL, 2009* |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***4) PRINCIPLES OF PHARMACOLOGY (1 ECTS)*** | | |
| Teacher: Donatella FANINI | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to provide students with a comprehensive introduction to the fundamental pharmacologic principles that govern the action of all drugs on the body. On successful completion of this module, the student should understand the molecular mechanisms of drug action (pharmacodynamics); mechanisms of absorption, distribution, metabolism and excretion of drugs (pharmacokinetics) and the clinical use of drugs in the diagnosis, prevention, and treatment of disease (pharmacotherapy). |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Pharmacokinetics. Pharmacodynamics.<br>- Autonomic pharmacology.<br>- Drugs acting on the central nervous system.<br>- Cardiovascular and renal pharmacology.<br>- Endocrine pharmacology.<br>- Gastrointestinal pharmacology.<br>- Drug therapy of inflammation.<br>- Drugs used in disorders of coagulation.<br>- Antidiabetic drugs.<br>- Chemotherapy of infectious disease. |

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| | | On successful completion of this module, the student should:<br>o have knowledge of basic pharmacologic principles that govern the action of all drugs on the body and how drugs produce therapeutic and side effects.<br>o have knowledge and understanding of how specifics characteristics of patient and the genetics can affect the response to a particular class of drugs;<br>o understand and explain the rationale behind designing different dosing regimens of particular drugs in specific patient populations;<br>o understand the pharmacology and clinical use of the major class of clinically important drugs;<br>o demonstrate skill in recognize adverse effects and drug interaction and capacity for reading and understanding other texts on related topics. |
| 3 | Prerequisites and learning activities | The student must know principles of: anatomy, physiology, cell biology and biochemistry. |
| 4 | Teaching methods and language | Lectures.<br>Language: Italian and English<br>Ref. Text books:<br>- Richard D. Howland-Mary J. Mycek *LE BASI DELLA FARMACOLOGIA*, Zanichelli, 2007.<br>-Furlanut M. *Farmacologia- Principi e Applicazioni* II Edizione 2013 Piccin.<br>- Bertram G. Katzung, Susan B. Masters, Anthony J. Trevor *Basic and Clinical Pharmacology* , 12th Edition Mc Graw Hill LANGE™ 2012. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| **Programme of "SCIENZE MEDICHE II"**<br>***"MEDICAL SCIENCES II"***<br>**This course consists of four modules: 1) Diseases of the cardiovascular system, 2) Diseases of the skin, 3) Diseases of digestive system I, 4) Diseases of digestive system II** | | |
| **D0856, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 2nd Year, 2nd Semester** | | |
| **Number of ECTS credits: 6 (workload is 150 hours; 1 credit = 25 hours)** | | |
| ***1) DISEASES OF THE CARDIOVASCULAR SYSTEM (1 ECTS)*** | | |
| Teacher: Silvio ROMANO | | |
| 1 | Course objectives | The goal of this course is to provide an overview of pathophysiology, symptoms and clinical presentation of the main cardiovascular disease.<br>On successful completion of this module, the student should understand the clinical and functional findings of a cardiac patients. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>Main symptoms in cardiac patients, Cardiovascular semeiotics, risk factors for cardiovascular disease, diagnostic examination in cardiac patients, Coronary artery disease, hypertension, ECG , Arrhythmias, Syncope, shock, Valvular heart diseases, Heart failure, cardiac arrest and cardiorespiratory resuscitation.<br><br>On successful completion of this module, the student should<br>o have knowledge of basic symptoms in cardiac patients,<br>o have knowledge and understanding of pathophysiology of the main cardiovascular diseases,<br>o understand and explain the clinical profile of patients with cardiac diseases<br>o understand advantages, limits and contraindications to cardiac diagnostic and therapeutic tools,<br>o demonstrate skill in the evaluation of cardiac symptoms and ability to early recognize potentially life threatening clinical manifestations,<br>o demonstrate capacity to recognize the main risks in cardiac patients. |
| 3 | Prerequisites and learning activities | The student must know the basic notions of cardiac anatomy and physiology, contained in the exams anatomy and physiology |

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| 4 | Teaching methods and language | Lectures, home work.<br>Language: Italian<br>Ref. Text books:<br>-M. Penco. *"Dispense di Cardiologia per le lauree triennali nelle professioni sanitarie".* Cesi Edizioni, 2005. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Written Examination (100%)<br>Written exam: 2-hours multiple choice test |
| ***2) DISEASES OF THE SKIN (2 ECTS)*** | | |
| Teacher: Maria Concetta FARGNOLI | | |
| 1 | Course objectives and learning outcomes | To provide the basic concepts of dermatological disease with particular interest for those involving the field of nutrition sciences. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Definition of the main dermatological disease categories,<br>- General pathology : histology, inflammation pathology and types,<br>- Mechanisms underlying these disorders (etiology, pathogenesis),<br>- Granulomas, Neoplasia, Tumours of epithelian tissue<br><br>At the end of the course the students is expected to:<br>o Have acquired knowledge and understanding of the basic dermatology and type of skin lesions.<br>o Be able to apply knowledge and understanding when a cutaneous disease is present and affects patient, through collection of medical history and patient's exam.<br>o Be able to identify patient's needs and plan nutrition programme during and after pregnancy.<br>o Be able to successfully explain and fulfill the objectives of healthy nutrition to the patients and to other professionals.<br>o Have capacities to continue learning, be able to assess his/her knowledge needs and have the skill to further explore a specific topic. |
| 3 | Prerequisites and learning activities | The student should have the basic principles of inflammation, infection and neoplastic processes. |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work<br>Language: Italian<br>Ref. Text books:<br>i) *Manuale di Dermatologia Medica e Chirurgica*.,Tullio Cainelli, Alberto Giannetti, Alfredo Rebora. McGraw-Hill, 2008.<br>ii) *Dermatologia e Venereologia,* P.L. Amerio, M.G. Bernengo, S. Calvieri, S. Chimenti, M. Pippione, M. Aricò, N. Aste, G. Borroni, G. Leigheb, G. Micali, E. Nunzi, A.M. Offidani, A. Tulli, Casa Editrice Minerva Medica, 2009. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes |
| ***3) DISEASES OF DIGESTIVE SYSTEM I (1 ECTS)*** | | |
| Teacher: Giuseppe FRIERI | | |
| 1 | Course objectives | This Module aims to provide the students with a basic understanding of the digestive system and its main diseases. It focuses on diseases of the gastrointestinal tract, including the hepatobiliary system, and nephrology, including diseases of the urinary tract.<br>The student will acquire knowledge of signs and symptoms, diagnostic methods, and drugs used for the treatment of digestive and urinary tract diseases. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module:<br>- oral cavity/salivary glands, esophagus, stomach, duodenum, jejunum, ileum, colon/rectum/anus, liver, biliary tract/gallbladder, pancreas,<br>- digestion, absorption, motility,<br>- the most common categories of disease processes: inflammatory, infectious, neoplastic, |

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| | | vascular, metabolic/endocrine, immune-mediated, congenital, trauma,<br>- common symptoms and signs of GI tract diseases,<br>- diagnostic methods and treatments.<br><br>On completion of the training candidates should:<br>o know the digestive system anatomy and physiology,<br>o know and understand the symptoms of the main diseases of the GI tract<br>o be able to match each major component of the GI tract (oral cavity/salivary glands, esophagus, stomach, duodenum, jejunum, ileum, colon/rectum/anus, liver, biliary tract/gallbladder, pancreas) to the most common types of GI pathophysiology (digestion, absorption, motility),<br>o for each major component of the GI tract, be able to identify the most common categories of disease processes (inflammatory, infectious, neoplastic, vascular, metabolic/endocrine, immune-mediated, congenital, trauma),<br>o be able to explain the relations between the diseases and the nutrition habits |
| 3 | Prerequisites and learning activities | The student must have the basic mathematical notions and methods as acquired in the secondary schools |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work<br>Language: Italian/English<br>Ref. Text books :<br>Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***4) DISEASES OF DIGESTIVE SYSTEM II (2 ECTS)*** | | |
| Teacher: Giovanni LATELLA | | |
| 1 | Course objectives and learning outcomes | This Module focus on the pathology, pathophysiology, signs and symptoms, diagnostic methods, and drugs used for the treatment of digestive system diseases. The basic science and clinical concepts of Module 1 are expanded to include the pathology and pathophysiology, as well as the pharmacological treatments of diseases of these systems. This module emphasizes the molecular and cellular pathology, clinical, pathologic, and laboratory findings, treatment and management of patients with GI, hepatic, and genitourinary disorders. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module include:<br>- Gastroesophageal Reflux Disease (GERD)<br>- Jaundice<br>- Diverticulosis/diverticulitis<br>- Cirrhosis<br>- Portal hypertension<br>- Esophageal varices<br>- Dysphagia<br>- Crohn's Disease<br>- Peritonitis<br>- Inflammation<br>- General disorders of the gastro-intestinal tract<br>- Protection of the gastro-intestinal tract<br>- Disordered nutrition<br>- Microbial infections<br>- Mental-emotional stresses<br>- Disorders of the liver, gall bladder and pancreas<br><br>At the end of the course the students is expected to:<br>o Explain the basic anatomy of the gastrointestinal system (i.e., esophagus, stomach, small intestine, colon, liver, gallbladder, and pancreas)<br>o Describe the normal histology of the gastrointestinal system (i.e., esophagus, stomach, small intestine, colon, liver, gallbladder, and pancreas)<br>o Explain the normal physiological function of the gastrointestinal system, specifically |

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| | | exocrine and endocrine functions, digestion and absorption, motility, and immunology<br>o Describe the pathophysiology of diseases and disorders that affect the GI system, including genetic abnormalities, infection, autoimmunity, inflammation, ischemia, dysmotility, obstruction, and malignancy<br>o Describe the clinical presentation of diseases and disorders that affect the GI system, including genetic abnormalities, infection, autoimmunity, inflammation, ischemia, dysmotility, obstruction, and malignancy<br>o Identify and describe the evaluation of gastrointestinal diseases, including laboratory, imaging/radiologic, endoscopic, and surgical evaluation<br>o List and describe the therapeutic options for both common and rare gastrointestinal diseases, including medication-based, endoscopic, surgical, and microbiologic<br>o Distinguish between normal and abnormal values for common clinical laboratory tests of GI tract function.<br>o be able to classify disease of the renal system (Vascular, Infectious, Neoplastic, Drug, Inflammatory, Congenital, Allergic/autoimmune, Trauma/physical, Endocrine/metabolic).<br>o Describe the structure and function of the renal system.<br>o Explain physiologic control of fluid, electrolyte and acid-base balance.<br>o Identify common infectious etiologies for upper and lower urinary/renal infections.<br>o Describe the cases, effects and management of obstructive urinary tract disease. |
| 3 | Prerequisites and learning activities | The student should have the basic principles of inflammation, infection and neoplastic processes. |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work<br>Language: Italian<br>Ref. Text books:<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| **Programme of "DISCIPLINE CHIRURGICHE"**<br>***"SURGERY DISCIPLINES"***<br>**This course consists of three modules: 1) Bariatric Surgery, 2) Anesthesiology, 3) Vascular surgery** | | |
| **D4196, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 3rd Year, 1st Semester** | | |
| **Number of ECTS credits: 9 (workload is 225 hours; 1 credit = 25 hours)** | | |
| ***1) BARIATRIC SURGERY (3 ECTS)*** | | |
| Teacher: Marco CLEMENTI | | |
| 1 | Course objectives | Weight-loss (bariatric) surgery is a lifesaving and life-changing treatment for severely obese patients who have not had success with traditional, medically supervised weight-loss strategies such as diet modification, exercise, and/or medication.<br>This module explains when bariatric surgery might be appropriate, what is involved in the procedure, and what to expect immediately after the surgery and in the long term. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Introduction to Bariatric surgery, that is inducing weight loss by physically restricting the amount of food patients can eat and/or by interrupting the digestive process,<br>- the three categories of Bariatric procedures:<br>- Restrictive surgeries - limiting the amount of food a patient can consume by reducing the size of the stomach or the amount it can expand (Lap-Band procedure, the vertical banded gastroplasty "stomach stapling", and the sleeve gastrectomy),<br>- Combined procedures - limiting the amount of food by rerouting the digestive tract so that food actually bypasses most of the stomach,<br>- Malabsorptive procedures – limiting the absorption of calories and nutrients from food by creating a bypass around a significant length of intestine.<br>- Benefits and risks of bariatric surgery |

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| | | On successful completion of this module, the student should<br>o have knowledge of bariatric surgery procedures,<br>o have knowledge and understanding of risks connected with bariatric surgery,<br>o understand and explain the clinical profile of patients candidates for bariatric surgery,<br>o understand advantages, limits and contraindications to bariatric surgery,<br>o be aware and be able to explain the importance of long-term follow-up with continuous counseling for eating disorders for at least two years,<br>o be able to conduct, in a multidisciplinary team, a presurgical counseling that should include a comprehensive evaluation of a person's physical and mental health, as well as his or her dietary and activity habits, overall lifestyle, and post-surgical wellness goals.<br>o be able to work in team with surgeons and psychologists for guiding the patients after surgical interventions to significantly alter their dietary and activity habits through the physical, emotional, and social changes that inevitably result from dramatic weight loss, |
| 3 | Prerequisites and learning activities | The student must know the basic notions of anatomy and physiology, contained in the exams anatomy and physiology |
| 4 | Teaching methods and language | Lectures, home work.<br>Language: Italian<br>Ref. Text books:<br>-Teacher' s Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***2) ANESTHESIOLOGY (3 ECTS)*** | | |
| Teacher: Alessandra CICCOZZI | | |
| 1 | Course objectives and learning outcomes | Acquiring knowledge and understanding about medical and surgical emergencies and their treatment.<br>Acquiring knowledge and understanding about technical anesthesia |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>-Elements of the history of anesthesia<br>-The preoperative evaluation<br>-Induction and tracheal intubation<br>-Maintenance and awakening from anesthesia<br>-Monitoring preoperative<br>-Loco-regional anesthesia: definition and pathophysiology<br>-Toxicity of local anesthetics<br>-Physiopathology of pain<br>-Local anesthetics<br>-Nsaids<br>-Opioids<br>-Cardioactive drugs<br>-Treatment of acute respiratory failure<br>-Cardiopulmonary arrest<br><br>On successful completion of this module, the student should<br>o have profound knowledge of drugs and chemistry,<br>o have knowledge and understanding therapeutic elements,<br>o understand and explain techniques of regional anesthesia, the appropriate drugs, and the recognition and management of complications,<br>o demonstrate skills and capacities in the approach of patientsand abilityto start treating patients for medical emergencies arising during dental procedures,<br>o be able to suggest or prescribe adequate postoperative analgesia,<br>o demonstrate capacity for reading and understand other texts on related topics. |
| 3 | Prerequisites and learning activities | Basic knowledge of general physiological and biological elements |
| 4 | Teaching methods and language | Lectures, team work and clinical practice<br>Language: Italian<br>Ref. Text books: |

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| | | -Miller R.D. ,*Anesthesia,* Elsevier, 2010.<br>-Marino P.L., *Terapia Intensiva*, Elsevier Masson, 2007. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***3) VASCULAR SURGERY (3 ECTS)*** | | |
| Teacher: Marco VENTURA | | |
| 1 | Course objectives | This module is designed to develop the knowledge and practical skills of the Care Practitioner student in their specialist field and to assist the individual to achieve the basic competencies for vascular surgery. The module aims to develop and build on the core generic skills of working in surgical care, whilst concentrating on those specialist aspects of surgery, clinical examination, ward and clinical based patient care. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the Module:<br>- Anatomy and physiology of the venous system;<br>- Anatomy and physiology of the arterial system;<br>- Disease of the venous system;<br>- Disease of the arterial system;<br>- Disease of the lymphatic system;<br>- Assessment and management of arterial disease, including conservative, pharmacological and surgical management;<br>- Assessment and management of venous disease, including conservative, pharmacological and surgical management;<br>- Assessment and management of lymphoedema;<br>- Emergency assessment and treatment and management of: acute ischaemic limb and deep vein thrombosis;<br>- Signs and symptoms of vascular disease including intermittent claudication;<br>- Effects of lifestyle on vascular disease;<br>- Post-operative complications and management of vascular surgical procedures;<br>- Extra-anatomical procedures;<br>- Radiological intervential including angioplasty and stenting;<br>- Arterial embolectomy;<br>- Assessment and management of wounds with a vascular aetiology, including ulceration.<br><br>On completion of the training candidates should:<br>o know nutrition and metabolic/surgical stress,<br>o know and understand nutrition and wound healing, nutrition and vascular pathophysiology, enteral and parenteral feeding formulae<br>o be able to explain vascular diseases that have nutrition components,<br>o know and understand nutrition screening, assessment and diagnosis of vascular diseases that have nutrition components,<br>o be able to monitor nutritional status and provide counseling regarding medical nutrition therapy aimed at lowering blood cholesterol, altering platelet aggregation, etc.,<br>o be able to critically apply knowledge of normal and altered vascular anatomy and patho-physiology to maintain high quality surgical patient care. |
| 3 | Prerequisites and learning activities | The student must have the basic notions of Anatomy and Physiology |
| 4 | Teaching methods and language | Lectures, team work, exercises, home work<br>Language: Italian/English<br>Ref. Text books :<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| **Programme of "DISCIPLINE NEUROLOGICHE E PSICOCOMPORTAMENTALI"**<br>***"NEUROLOGICAL AND PSYCHO-BEHAVIORAL DISCIPLINES"***<br>**This course consists of four modules: 1) Principles of Psychiatry, 2) Child and adolescent Neuropsychiatry, 3) Principles of Neurological Rehabilitation, 4) Principles of Neurology** | | |
| **D3846, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 3rd Year, 1st Semester** | | |
| **Number of ECTS credits: 7 (workload is 175 hours; 1 credit = 25 hours)** | | |
| ***1) PRINCIPLES OF PSYCHIATRY (2 ECTS)*** | | |
| Teacher: Massimo CASACCHIA | | |
| 1 | Course objectives | The goal of this course is to provide the knowledge of the main psychiatric disorders that can affect the patients treated by nutritionists. On successful completion of this module, the students should understand the concept of mental health and the limitations imposed by mental disorders on their patients. Also they should be able to appropriately address their mentally distressed patients to community-based mental health services for assessment, diagnosis and treatment. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- the organization of community-based mental health services in Italy;<br>- psychopathology (disorders of perception, disorders of thought, disorders of memory, disorders of emotion, with a special attention to disorders of consciousness);<br>- Anxiety Disorders: clinical physiopathology and therapy;<br>- Mood Disorders: clinical physiopathology and therapy.<br><br>On successful completion of this module, the student should:<br>o have knowledge of the organization of the psychiatric care in Italian community-based services<br>o have knowledge and understanding of main psychiatric disorders in (neurological, orthopedics, disabled, etc.) patients that they will care in their profession<br>o understand and explain psychiatric symptoms and the limitations induced by the psychiatric symptoms in their patients distinguish them from their disabling condition<br>o understand psychological sufferance cause by mental disorders<br>o demonstrate skill in communication with patients and their caregivers and ability to refer them to appropriate care services and professionals,<br>o demonstrate capacity for working in multidisciplinary teams for the treatment of eating disorders and obesity. |
| 3 | Prerequisites and learning activities | The student must have a basic knowledge of neuroanatomy and central nervous system physiology. |
| 4 | Teaching methods and language | Lectures, workshop.<br>Language: Italian, English<br>Ref. Text books<br>Bogetto F. Maina G. *Elementi di Psichiatria*. Ed. Minerva Medica, Torino, 2006. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***2) CHILD AND ADOLOSCENT NEUROPSYCHIATRY (2 ECTS)*** | | |
| Teacher: Enzo SECHI | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to provide the students with scientific knowledge enabling them to understand the child development peculiarities since the psycho physiological birth and to assess the possible side motor, cognitive, behavioral, affective and socio-relational alterations as well to evaluate the methods of neurological diseases evolution and of rehabilitation of some of the main forms of neurological infant and child diseases. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Maturing and development of the central nervous system;<br>- The motor skills of the baby and its development; the reflexes of the newborn and infant |

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| | | equilibrium reactions;<br>- The perinatal damage: hypoxic and ischemic encephalopathy of the term and preterm newborn;<br>- Malformations of the CNS;<br>- The infantile cerebral palsy: classification, clinical comorbidities and complications;<br>- The motor and verbal dyspraxia;<br>- The epilepsies of infants and children;<br>- The mental retardation and mental disability;<br>- The posture, the body image and its pathologies (vertigo, ataxia, headaches).<br><br>On successful completion of this module the student should<br>o have knowledge of children development and neurological disease evolution;<br>o have knowledge and understanding of functional deficits and clinical comorbidities;<br>o demonstrate ability to identify the neurological and mental disability;<br>o be able to recognize dyspraxia and cerebral palsy;<br>o be able to apply the charge of disability;<br>o be able to recognise the relevant techniques in diagnostics using appropriate scientific language;<br>o be able to communicate effectively with the young patients and their parents and to work in a multidisciplinary team, showing commitment to responsibilities. |
| 3 | Prerequisites and learning activities | The student must know the basic notions of Neurology and Neuro-rehabilitation, Pediatrics. |
| 4 | Teaching methods and language | Lectures and practical exercises. Language: Italian and English<br>Ref. Text books<br>-Roberto Militerni *"Neuropsichiatria infantile*", Ed . Idelson - Gnocchi, 2004<br>- Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***3) PRINCIPLES OF NEUROLOGICAL REHABILITATION (2 ECTS)*** | | |
| Teacher: Irene CIANCARELLI | | |
| 1 | Course objectives | The main objective of the course is to provide the future nutritionists with the essential knowledge of rehabilitative approaches in neurological diseases in order to develop basic skills for working in a multidisciplinary setting for planning successful rehabilitation in patients with severe brain injury and disability |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- The evaluation of the patient for neurological rehabilitation<br>- Plasticity mechanisms and neuromuscular facilitation techniques<br>- Physical therapy<br>- Rehabilitation of neuromuscular diseases<br>- Rehabilitation of severe traumatic brain injury<br>- Stroke rehabilitation<br>- Rehabilitation of Parkinson's disease<br>- Rehabilitation of motor neuron diseases<br>- Rehabilitation of peripheral nerves diseases<br>- Rehabilitation of multiple sclerosis<br><br>On successful completion of this module the student should<br>o Have knowledge of key anatomical and physiological concepts underlying rehabilitation (neuroplasticity, brain complexity, brain organization and segregation, brain learning)<br>o Identify the main factors which can influence neurological outcome during rehabilitation<br>o Have knowledge of current international neurorehabilitation guidelines<br>o Be able to apply the appropriate nutrition elements in support of the rehabilitative treatment of the different neurological disabilities. |
| 3 | Prerequisites and learning activities | The student has to know basic principles and notions of neurological diseases |

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| 4 | Teaching methods and language | Lectures and practical exercises.<br>Language: Italian, English<br>Ref. Text books:<br>-Sandrini G., Dattola R., *Compendio di Neuroriabilitazione*, Verduci Editore, 2012. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***4) PRINCILES OF NEUROLOGY (1 ECTS)*** | | |
| Teacher: Carmine MARINI | | |
| 1 | Course objectives and learning outcomes | The main objective of the course is to provide the future nutritionist with the essential knowledge of neurological diseases with respect to epidemiology, pathogenesis, and clinical picture in order to enable him/her to apply the correct dietary principles in support of diagnostic methods and therapeutic approaches in neurological diseases |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- The neurological patient<br>- Anatomy and physiology of the central and peripheral nervous system<br>- The neurological examination<br>- Major clinical syndromes<br>- Cerebrovascular diseases<br>- Traumatic brain injury and disorders of consciousness<br>- Meningitis and encephalitis<br>- Epilepsy<br>- Movement disorders<br>- Dementias<br>- Amyotrophic lateral sclerosis<br>- Muscle and neuromuscular diseases<br>- Metabolic encephalopathies<br>- Demyelinating diseases<br>- Myelitis<br><br>On successful completion of this module the student should:<br>o Have knowledge of key anatomical and physiological concepts (cerebral areas and neural pathways, functional neural systems which are impaired in neurological diseases)<br>o Have knowledge of main neurological diseases<br>o Have knowledge of main assessment tools (laboratory and instrumental tools, clinical scales) in neurological diseases<br>o Identify the factors which can influence the outcome of neurological diseases |
| 3 | Prerequisites and learning activities | The student has to know basic principles and notions of central and peripheral nervous systems anatomy |
| 4 | Teaching methods and language | Frontal lessons, ad hoc seminars<br>Language: Italian, English<br>Ref. Text Books:<br>– Robert C. Collins, *Neurologia*, Edises Editore, 1999 *(Italian)*<br>– Robert C. Collins, *Neurology*, *Saunders Text and Review Series*, Edition 1, Saunders1997 Elsevier Health Sciences *(English)* |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

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| ***"CLINICAL INTERDISCIPLINARY SCIENCES"*** | | |
| **This course consists of three modules:**<br>**1) Gynecology and Obstetrics, 2) Principles of Genetics, 3) Principles of Pediatrics** | | |
| **D0509, COMPULSORY**<br>**First Cycle Degree in NUTRITION AND DIETETICS, 3rd Year, 2nd Semester** | | |
| **Number of ECTS credits: 8 (workload is 200 hours; 1 credit = 25 hours)** | | |
| ***1) GYNECOLOGY AND OBSTETRICS (3 ECTS)*** | | |
| Teacher: Angela D'ALFONSO | | |
| 1 | Course objectives | The goal of this course is to provide the student with clinical competence in managing common and important clinical problems that women may present within the discipline of obstetrics and gynecology. The future nutritionist will learn the important role of diet in a range of health problems arising in the prenatal and perinatal periods and in the oncological diseases. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Female reproductive system: anatomy, physiology and embryology.<br>- Fibroids.<br>- Mullerian anomalies.<br>- Irregular periods. Amenorrhea/oligomenorrea.<br>- Sexual disorders.<br>- Ectopic pregnancy.<br>- Pregnancy hygiene.<br>- Antepartum haemorrhage, obstetrical emergencies (placenta praevia,abruptio placentae).<br>- Hypertension in pregnancy.<br>- Preterm premature rupture of membranes.<br>- Obstetrical ultrasound.<br>- Management of Rh negative status.<br>- Drugs and pregnancy.<br>- Third trimester complications.<br><br>On successful completion of this module, the student should:<br>o Recognize the symptoms and physical findings associated with hypoestrogenism and the management of these menopausal/perimenopausal symptoms.<br>o Know the three stages of labor and recognize common abnormalities.<br>o Describe the main pathologies in pregnancy with a strong component in dietary habits.<br>o be able to summarise current developments on strategy for reducing prevalence of diet-related diseases.<br>o Cite the risk factors for pregnancy and labor due to unhealthy diet.<br>o Be able to list risk factors for cervical, endometrial, and ovarian cancers.<br>o - Describe symptoms and physical findings of a patient with endometrial cancer and with ovarian cancer.<br>o be able to work in multidisciplinary team in support of women's health maintenance during pregnancy and treatment of pathologies |
| 3 | Prerequisites and learning activities | The student must know female physiology, anatomy, pathology microbiology and oncology, in particular physiologic and pathologic pregnancy. |
| 4 | Teaching methods and language | Lectures, team work, home work, tutorials, simulations.<br>Language: Italian<br>Ref. Text books:<br>Caruso, *Manuale di Ginecologia e Ostetricia*, CIC Edizioni Internazionali II edizione 2012.<br>Colacurci, Cappadona, Marchesoni, Piga, *Ostetrica e Ginecologia per Ostetrica/o*, Idelson Gnocchi Editore, 2013. |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.. |
| ***2) PRINCIPLES OF GENETICS (3 ECTS)*** | | |

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| Teacher: Elvira D'ALESSANDRO | | |
| 1 | Course objectives and learning outcomes | The goal of this course is to introduce the students to a fascinating and controversial area of contemporary science. It presents basic terms, principles, and research methods used in the study of genetics. Students learn about the transmission, distribution, arrangement, and alteration of genetic information and how it functions and is maintained in populations. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Structure and Biochemistry of DNA<br>✓ DNA - the Genetic Code<br>✓ Structure, Replication, and Manipulation of DNA<br>✓ Transcription and Translation<br>- Transmission Genetics<br>✓ Basic and Advanced Principles of Heredity<br>✓ The Chromosomal Basis of Heredity<br>- Linkage, Mapping, and Chromosomes<br>✓ Gene Linkage and Genetic Mapping<br>✓ Human Karyotypes and Chromosome Behaviour<br>- Prokaryotic Genetics<br>✓ The Genetics of Bacteria and Viruses<br>✓ Molecular Mechanisms of Prokaryotic Gene Regulation<br><br>On successful completion of this module the student should be able to<br>o **explain** the fundamental principles of transmission genetics, molecular genetics, and population genetics at appropriate level.<br>o **develop** problem solving, critical thinking, and communication skills both generally and with respect to genetic problems.<br>o **describe, analyze, and interpret** both classical and modern experimentation that have contributed to our knowledge of genetics.<br>o **analyze** genetic data using statistical procedures<br>o **describe** modern experimental approaches in genetics..<br>o **describe** the basic aspects of the flow of genetic information from DNA to proteins. |
| 3 | Prerequisites and learning activities | The student must know the basic notions of Biology and Histology. |
| 4 | Teaching methods and language | Lectures and practical exercises.<br>Language: Italian and English<br>Ref. Text books<br>- Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |
| ***3) PRINCIPLES OF PEDIATRICS (2 ECTS)*** | | |
| Teacher: Giovanni NIGRO | | |
| 1 | Course objectives | The goal of this course is to provide the knowledge of the main health problems of child patients with special focus on nutrition and diet. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | Topics of the module include:<br>- Physiological and pathological growth and development of the child.<br>- Infant nutrition: breast and artificial feeding, weaning, jaundice, nutrition in the second year of life. Perinatal suffering and neonatal asphyxia and care; hyaline membrane disease.<br>- Gastro enteric tract diseases: Celiac Disease; Vomiting; Acute and chronic diarrhoea; Cystic Fibrosis; Food allergies.<br>- Respiratory diseases: diseases of the upper airways. Bronchiolitis; Pneumonia.<br>- Cardiovascular diseases: Major congenital heart disease; Acquired heart disease.<br>- Rheumatic disease.<br>- Urinary tract diseases: Glomerulonephritis; Nephritic and Nephrotic syndromes; Urinary tract infections.<br>- Infectious disease: Major viral and bacterial infections. |

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| | | On successful completion of this module, the student should<br>o know and understand the fundamentals of Paediatrics and neonatology.<br>o Apply knowledge and understanding in the recognition of the main problems in the care of child patients.<br>o be able to implement nutrition care planning starting from the newborn and child patient diagnosis, in a multidisciplinary team.<br>o be able to explain to the little patients, their parents and to other professionals the signs and symptoms of the main physiological and pathological clinical patterns in newborns and children.<br>o be able to assess the own knowledge needs and then to guide own future learning in these topics |
| 3 | Prerequisites and learning activities | The student must have the basis of human physiology and anatomy. |
| 4 | Teaching methods and language | Lectures.<br>Language: Italian<br>Ref. Text books:<br>Notes of the teacher |
| 5 | Assessment methods and criteria | Formative Assessment: the students are invited to make some home work and to participate to discussions on concrete examples. The active participation is supported and stimulated also by short Q&A sessions.<br>Summative Assessment: Formal Oral Examination (100%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes. |

| **COMPULSORY TRAINEESHIPS**<br>**The students must perform Traineeship in each year of the Degree Course** | | |
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| **Programme of "Tirocinio I"**<br>**"Traineeship I"**<br>**The students will attend care settings of Internal Medicine, General Surgery, Ambulatories** | | |
| **D3638 , compulsory**<br>**First cycle Degree in NUTRITION AND DIETETICS , 1rd year, 2nd semester** | | |
| **Number of ECTS credits: 16 (workload is 400 hours; 1 credit = 25 hours)** | | |
| Coordinator: Maria Marcella MATTEI | | |
| **1** | Objectives | The aim of this topic is to prepare students for the dietetic workforce by providing opportunities for them to develop and demonstrate entry level competencies in program development, small group education and facilitation and professional practice. |
| **2** | Course content and Learning outcomes (Dublin descriptors) | In the 1st year Topics include:<br>- knowledge enhancement of evidence based nutrition and dietetic practice through focusing on the basic approaches to investigating nutritional health and diet-related disease states in individuals and populations,<br>- examples of application of these in the field of nutrition and dietetics,<br>- introduction to basic methods of research in nutrition and dietetics,<br>- recent developments in the field, as they appear in the scientific literature.<br><br>On completion of this topic, students will be able to demonstrate:<br>o Knowledge and application of health promotion strategies.<br>o skills in nutrition `project' planning including needs assessment, implementation and evaluation.<br>o Capacity to apply primary health care principles within the context of nutrition and dietetic practice.<br>o Professional attitudes and practices that reflect a competent health professional who values ethical behaviour and is committed to excellence and life-long learning.<br>o An ability to work as an effective member of a team and work collaboratively and productively with a range of people and professions.<br>o Productive critical self and peer reflection.<br>o Clear and effective communication skills. |

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| **3** | Prerequisites and learning activities | The student must have satisfactorily completed the first semester topics. The students will do seminars, short reports as assignment. They will work individually and in small groups for the development of dietary plans and application of first knowledge under the guide of a supervisor. A written report will be evaluated as outcomes of the placement. |
| **4** | Teaching methods and language | The Community/Public Health placement is a 10-week full-time placement at a health service / Hospital, supported by a Placement Educator who works there. The placement gives students the opportunity to develop and demonstrate entry level competencies required to work as a Dietitian in program development, small group education and facilitation and professional practice.<br>Language: Italian<br>Ref. Text books:<br>-Teacher's Notes |
| **5** | Assessment methods and criteria | Formative Assessment: Whilst attending the lectures, the student will engage with regular formative case based discussions, and in addition, for the theoretical examination, guidance and practice papers will be given and reviewed during the placement, prior to the summative examination date.<br>Summative Assessment: Formal Oral Examination (50%), Continuous Assessment, Assignments (50%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment: practical work under supervision (35%),<br>Assignments: 3 short Practical Reports (15%) |
| **Programme of "Tirocinio II"<br>"Traineeship II"<br>The students will attend care settings of Specialist Medicine and Surgery, Ambulatories, Oncology, Laboratory analysis.** | | |
| **D3640, compulsory<br>First cycle Degree in NUTRITION AND DIETETICS, 2nd year, 2nd semester** | | |
| **Number of ECTS credits: 32 (workload is 800 hours; 1 credit = 25 hours)** | | |
| Coordinator: Maria Marcella MATTEI | | |
| 1 | Objectives | The clinical internship allows the student to:<br>• acquire knowledge, skills and attitudes for entry level practice as a dietitian in clinical practice,<br>• develop decision-making skills,<br>• practice in a multidisciplinary setting the acquired knowledge. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | In the 2nd year Topics aim to<br>- provide students with the opportunity to demonstrate and develop skills in the effective delivery of nutrition care to individuals and their families in a clinical setting,<br>- give students the opportunity to demonstrate a competent, organised, professional and ethical approach to work, with skills required for reflective practice and independent learning in a supported setting.<br><br>On successful completion of Internship, the students will be able to demonstrate the following attributes at entry level practice:<br>o Broad knowledge and skills as a clinical practitioner, such that she/he demonstrates entry level competence in the nutritional management and counselling of individual clients;<br>o Professional attitudes and practices which facilitate growth as a competent health professional and demonstrated ability to work as a contributing member of a dietetics department;<br>o Communicate in a professional manner to clients and other members of the health care team and<br>o Use the processes of critical thinking and evaluation in daily practice. |
| 3 | Prerequisites and learning activities | The student must have satisfactorily completed all Year I topics and Traineeship I. |
| 4 | Teaching methods and language | The Clinical Placement in Nutrition and Dietetics is a full-time 15 week placement in a hospital, supported by a supervising dietitian.<br>2-hour tutorials (10 in the second semester)<br>4-hour workshop (reports of team groups work)<br>15-week clinical placement (in several departments) |

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| | | Language: Italian<br>Ref. Text books:<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: Whilst attending the lectures, the student will engage with regular formative case based discussions, and in addition, for the theoretical examination, guidance and practice papers will be given and reviewed during the placement, prior to the summative examination date.<br>Summative Assessment: Formal Oral Examination (50%), Continuous Assessment, Assignments (50%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment: practical work under supervision (35%),<br>Assignments: 3 short Practical Reports (15%) |
| **Programme of "Tirocinio III"<br>"Traineeship III"<br>The students will attend critical and intensive, maternal and child care settings, and territorial structures.** | | |
| **D3642 , compulsory<br>First cycle Degree in NUTRITION AND DIETETICS, 3rd year, 2nd semester** | | |
| **Number of ECTS credits: 12 (workload is 300 hours; 1 credit = 25 hours)** | | |
| Coordinator: Maria Marcella MATTEI | | |
| 1 | Objectives | The aim of this internship is to:<br>-provide students with the fundamental knowledge and skills required for design, analysis, interpretation and critical evaluation of studies in human nutrition and dietetics.<br>- expose students to a range of current controversies and recent developments in human nutrition and dietetics.<br>- develop skills in scientific writing and presentation.<br>- foster an appreciation for lifelong learning and evidence based practice in human nutrition and dietetics within a professional development framework. |
| 2 | Course content and Learning outcomes (Dublin descriptors) | In the 3rd year Topics include:<br>- further knowledge enhancement of evidence based nutrition and dietetic practice through focusing on the basic approaches to investigating nutritional health and diet-related disease states in individuals and populations, and the application of these in the field of nutrition and dietetics.<br>- introduction to basic methods of research in nutrition and dietetics,<br>- current controversies and recent developments in the field, as they appear in the scientific literature.<br>After an introduction to basic methods of research in nutrition and dietetics, students will be provided with an opportunity to develop a research proposal as part of a group and then analyse a database of relevance to the research question, interpret the findings and present these in a form suitable for a scientific audience. The topic emphasises the individual and collective responsibilities of continuing education in professional practice.<br><br>On successful completion of Internship, the student should:<br>o Demonstrate an ability to apply their knowledge in the critical evaluation of the evidence base for current controversies and recent developments in human nutrition and dietetics and make recommendations for practice and future research.<br>o Demonstrate sufficient knowledge to develop a research proposal collaboratively, with consideration given to formulating a research question and project aims, identifying appropriate outcomes and data collection methods, considering ethical implications and planning for an evaluation of the findings.<br>o Independently extract relevant research data and analyse it statistically to generate accurate results and recommendations for practice and research.<br>o Present the outcomes of research covering all aspects of the research process using communication strategies suitable for scientific audiences.<br>o Actively understand and experience the responsibilities and rewards of professional development . |
| 3 | Prerequisites and learning activities | This topic requires students to have an understanding of human nutrition as it applies to the clinical and public health setting. In addition, students are required to have an understanding of the fundamentals of nutritional epidemiology and introductory biostatistics. |

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| 4 | Teaching methods and language | 90-minute tutorial (1 per week)<br>2-hour seminars (24 seminars)<br>1 intensive workshop (7 days)<br>1 project work completed by the end of the semester (45-hours)<br>Language: Italian<br>Ref. Text books:<br>-Teacher's Notes |
| 5 | Assessment methods and criteria | Formative Assessment: Whilst attending the lectures, the student will engage with regular formative case based discussions, and in addition, for the theoretical examination, guidance and practice papers will be given and reviewed during the placement, prior to the summative examination date.<br>Summative Assessment: Formal Oral Examination (50%), Continuous Assessment, Assignments (50%)<br>Oral exam: the student must provide evidence of the acquired knowledge and skills by proving in half an hour the achievement of the main Learning Outcomes.<br>Continuous Assessment: practical work under supervision (35%),<br>Assignments: 3 short Practical Reports (15%) |