Syllabus

Course Description

Course Title	Dietetics, food allergies and intolerances
Course Code	40422
Course Title Additional	
Scientific-Disciplinary Sector	MEDS-08/C
Language	English
Degree Course	Bachelor in Enogastronomy in Mountain Areas
Other Degree Courses (Loaned)	
Lecturers	dr. Massimiliano Tucci, Massimiliano.Tucci@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/55357
Teaching Assistant	
Semester	First semester
Course Year/s	3rd
CP	6
Teaching Hours	36
Lab Hours	24
Individual Study Hours	90
Planned Office Hours	18
Contents Summary	HUMAN NUTRITION: Physiology of the digestive tract; Digestion and absorption of macronutrients; Macro-, micronutrients, water, alcohol. Nutritional quality of foods; Food groups. PRINCIPLES OF DIETETICS: Description of body multicompartments and of the main techniques for measuring the body multicompartments; Energy requirement and energy balance between daily intake and energy expenditure; Methods to evaluate food energy; Energy needs of the population; Scientific basis to estimate human nutrient requirements and dietary reference values (DRVs) with a focus on dietary allowances for Italian population (LARN); Dietary Guidelines for the Italian population;

	Description of the principal methods used to measure food and/or nutrient intakes in population groups; Most common Food Allergies and intolerances; FOOD LABELLING.
Course Topics	The course pertains to the group of characterizing disciplines. It provides a general overview of scientific contents in the domain of human nutrition and dietetics. Educational objectives: knowledge on the anatomy and physiology of the digestive tract, on the principles at the basis of the digestion and absorption of macronutrients; the function and quality of macro- and micronutrients, water, and alcohol. The course will also provide the basics of the nutritional quality of foods and define and provide insights on the concept of "food groups". The "dietetics" part of the course will provide knowledge on energy requirements and energy balance between daily intake and energy expenditure. The program will then discuss the energy and nutrient needs of the population and scientific basis to estimate nutrient requirements and the recommended dietary allowances for the Italian population (LARN), the national Dietary Guidelines for the Italian population. A final focus will then be on the concepts of food allergy and food intolerance, with a basic explanation of the mechanisms underlying these phenomena and effective ways to face them from a nutritional standpoint. Topics: HUMAN NUTRITION: Physiology of the digestive tract; Digestion and absorption of macronutrients; Macro-, micronutrients, water, alcohol. Nutritional quality of foods; Food groups. PRINCIPLES OF DIETETICS: Description of body multicompartments and of the main techniques for measuring the body multicompartments; Energy requirement and energy balance between daily intake and energy expenditure; Methods to evaluate food energy; Energy needs of the population; Scientific basis to estimate human nutrient requirements and dietary reference values (DRVs) with a focus on dietary allowances for Italian population (LARN); Dietary Guidelines for the Italian population; Description of the principal methods used to measure food and/or nutrient intakes in population groups;

	Most common Food Allergies and intolerances; FOOD LABELLING. European regulations on food labelling and health claims made on foods
Keywords	Human nutrition principles of dietetics Food labelling
Recommended Prerequisites	-
Propaedeutic Courses	None
Teaching Format	Frontal lectures with the help of PowerPoint slides; Numeric exercitations with the help of spreadsheets and web resources.
Mandatory Attendance	Not compulsory, but strongly recommended
Specific Educational Objectives and Learning Outcomes	Knowledge and understanding Upon completion of their studies, graduates with a bachelor's degree in Food and Enogastronomy Sciences will have acquired a solid foundation of scientific knowledge in disciplines such as chemistry, physics, biology, mathematics, computer science, and law, specifically applied to the food and gastronomic sector. They will gain technological skills for managing production and transformation processes, along with an integrated view of the quality, safety, and sustainability of food supply chains and systems. In addition, graduates will understand the principles related to waste reduction, resource optimization, and the reconciliation of economics and ethics, which are central elements for addressing the modern challenges of the agri-food system." The knowledge and understanding skills mentioned above are acquired through participation in lectures, practical exercises, seminars, and through guided personal study and individual study as provided by the activated educational activities. The verification of the achievement of learning outcomes is mainly carried out through exams and any interim tests. The tests may be written and/or oral, and may also consist of reports and oral presentations of projects or seminars. Ability to apply knowledge and understanding Students will be able to practically apply the knowledge they have acquired, developing the ability to solve complex problems in the food and gastronomic sector. Thanks to a wide range of practical

	activities, such as laboratories, internships, workshops, and seminars, they will be able to use chemical, physical, sensory, and microbiological analysis methods to evaluate the quality and safety of food and production processes. Graduates of the first profile will be able to manage food processing and preservation processes, design new technological solutions, and apply knowledge of plant genetics and process planning to ensure the quality of the final product. Graduates of the second profile will have advanced skills in managing restaurant businesses, promoting gastronomic heritage, and applying fermentation techniques and food design. In both paths, the ability to enhance by-products and reduce waste will be central, contributing to the sustainable innovation of the sector. The educational activities are designed to strengthen the autonomy of judgment and the ability to make decisions in complex contexts, as well as to develop communication skills and the ability to work in multidisciplinary and international teams. At the end of the program, graduates will be able to independently apply their knowledge in professional contexts, promoting innovative and sustainable solutions for the challenges of the agri-food and gastronomic system. The achievement of the ability to apply knowledge is accomplished through critical reflection on the texts proposed for individual study, stimulated by classroom activities, the study of research and application cases presented by the professors, the performance of practical laboratory exercises, fieldwork, bibliographic research, the completion of individual and/or group projects included in the core and elective courses of the curriculum, as well as during internships and the preparation of the final exam. The assessments, carried out through written and/or oral exams, reports, and exercises, involve the completion of specific tasks in which the student demonstrates mastery of tools, methodologies, and critical autonomy. During internships, the assessment is conducted through the presentation of a report by the student to the supervising professor. Making judgements Evaluate and critically analyze the quality, safety, and sustainability of production processes and food products, considering scientific, technological, economic, and cultural aspects. Students will be able to make informed decisions based on scientific data and the

	analysis of production contexts to ensure the excellence of the final product. Apply ethical and sustainable approaches, reconciling economic needs with environmental and social requirements. Graduates will be able to identify solutions to reduce waste, enhance by-products, and optimize resource use, proposing food production models in line with the principles of the circular economy. Express independent judgments regarding innovative techniques for the transformation and enhancement of food and gastronomic productions, evaluating the risks and opportunities associated with the introduction of new technologies or business models, both locally and internationally. Interpret and manage complex data collected through chemical, physical, microbiological, and sensory analyses, in order to improve the quality of food products and effectively respond to food safety needs and regulatory requirements of the sector. Communication skills "Communicate effectively and appropriately with both technical and non-technical interlocutors, including professionals in the food and gastronomic sector, public and private institutions, and the general public. This includes the ability to adapt the communication style based on the audience, using the specific technical language of the food and gastronomic sector when necessary. Present and discuss the results of their analyses and research in both written and oral form, using technological and multimedia tools. Graduates will be able to draft technical reports, research papers, and scientific documents, as well as present their results clearly and structured, for example during conferences, seminars, or business meetings. Actively participate in discussions and group work in multidisciplinary and international contexts, demonstrating active listening, negotiation, and collaboration skills. Practical experiences and internships will provide students with the abilities to work effectively in teams and contribute to solving complex problems in the sector. Use the three languages of instruction of the course (Italian, German, and English) fluently and confidently, both for written and oral communication. Thanks to the trilingual approach of the Free University of Bozen-Bolzano, graduates will be able to face

	international work contexts, participate in global networks, and contribute to the development of international cooperation projects to address the challenges of the food and gastronomic sector.
Specific Educational Objectives and Learning Outcomes (additional info.)	Knowledge and understanding: Ability to interpretate the effect of nutrients/foods/diets on human physiology and metabolism in health. Ability to appreciate the effect of food processing on nutritional and quality of foods. The knowledge on the nutritional requirements in population groups. Applying knowledge and understanding: The basic elements for the definition of the nutritionally adequate diet for the different population subgroups. Communication skills: Knowledge and proper use of the disciplinary lexicon
Assessment	The learning will be evaluated through a written exam administered at the end of the semester. The exam will consist into two parts (part 1: closed test + part 2: problem-solving). The topic of the written exam evaluation will be based on the whole set of contents proposed during the course and questions about all the topics will be asked in in the written exam.
Evaluation Criteria	The closed test consists of 30 closed-ended questions. Each correct answer for closed-ended questions is evaluated 0,5 point (i.e. a maximum of 15 points). The problem-solving consists of 1 or 2 numerical questions to be solved based on data provided in the problem text; The maximum score for the problem-solving is 15 points. The final grade will be awarded as follows: Reaching at least 9 points in the closed test is needed for passing the test. Students who pass the closed test will undergo the problem-solving exam and the score of the problem-solving will then be added to that of the closed test for calculating the final score. Reaching at least 18 points in the final score (sum of points of the closed test + points in the problem-solving) is needed for passing the exam. Students that pass the closed test (e.g. 15 points) yet did not

	reach 18 total points (e.g. 2 points in the problem-solving = 17 points total) may decide to retain the score obtained in the closed test and ask for performing in a later date the problem-solving exam only. The exam score will be expressed in 30/30. Praise will be awarded to students who will demonstrate, beside the full final score of 30/30, the mastering of the nutritional language in the problem-solving exam.
Required Readings	*Lecture slides and reading material provided by the teacher during lectures.*
Supplementary Readings	*- SINU. LARN - Livelli di Assunzione di Riferimento di Nutrienti ed Energia. IV revisione. SICS Editore, (Milano)* *- CREA. Linee guida per una sana alimentazione. Revisione 2018. ISBN 9788833850375*
Further Information	
Sustainable Development Goals (SDGs)	Good health and well-being