UNIVERSITÀ DEGLI STUDI DI PALERMO

Characteristics

    

Educational objectives

The first cycle Degree Course aims at providing students with:
- The basic (theoretical, methodological, and technical-instrumental) knowledge for the critical analysis of food systems, namely of the food production, transformation and consumption processes, in the framework of a systemic sustainability.
- Large and articulated empirical knowledge of the gastronomic systems, through educational trips, field case studies and internships, to integrate frontal teaching with applied experience.
- Ability to critically process information related to food science, in order to contribute to the processes of knowledge, training, and representation of social, economic and political development.
- Ability to critically analyse the ways in which the multiple relationships between man and food develop, evolve and change over time and space, in order to investigate their implications on a cultural, social, political and environmental level.

Graduates in Gastronomic Sciences will possess a vast and articulated empirical knowledge of gastronomic systems through educational trips, field case studies and internships, in order to integrate classroom training with applied experiences. Graduates must also necessarily develop an empirical knowledge of gastronomic sciences, through an articulated program of educational trips and/or internships and/or apprenticeships, with national and international destinations and must know the English language.

Furthermore, graduates will have adequate training, from a theoretical, critical-interpretative and methodological point of view, to access the job market and to continue their training at an advanced level. In order to achieve these objectives, the training activities of the L-GASTR are divided into basic and characterizing activities. The basic training activities include the following disciplinary areas: statistical and chemical sciences; territorial and memory sciences; biodiversity sciences. The class-specific training activities include the disciplinary areas relating to: production sciences and food technologies; historical, philosophical and linguistic sciences; economic-juridical sciences and socio-political sciences; biomedical, psychological and nutritional sciences; socio-political sciences.

As regards the area of mathematical, statistical and chemical sciences, the teaching of Elements of general and organic chemistry (9 CFU) aiming to provide knowledge of chemistry, and namely of the notions of general and organic chemistry in order to better understand the various properties and molecular variations of foods. In particular, the educational objectives of the course include the study of chemical equilibria in solution, the concept of acid-base and redox reactions. Furthermore, the course includes the study of the main organic functional groups and biomolecules (carbohydrates, proteins, and fats). Another course in the same area is Elements of statistics for food science (6 CFU), providing students with the basic tools of statistics, probability theory, and in general of the scientific method of approaching real problems in the application fields of the food sector. Furthermore, students will be able to create, process and statistically analyse a dataset. Within the area of territorial sciences and memory, the CdS provides an integrated course of History and Geography of food (11 ECTS). In particular, the Cultural Geography of Food module deepens the methodologies and techniques of geographical observation concerning the food landscape and the food districts of the Mediterranean area. Furthermore, the course aims to provide the specific skills of the discipline developming of the ability to analyze geographically and interpret the main geographical emergencies related to food. Finally, students will be able to associate food with cultural heritage. The History of food culture module aims to introduce students to research methods and the production of historical knowledge aware of the acquisitions and revisions of the historiographical tradition, especially in terms of critical treatment of sources. The specific objective of the course is to deepen and understand the heterogeneous contributions that have characterized the history of food culture.

Within the area of biodiversity sciences, the teaching Plants in gastronomy (8 CFU) is envisaged in which various aspects will be studied in depth: Cytology (the plant cell, the nucleus, the cytoplasm, the plastids, the cell wall, the vacuole), histology (meristematic, parenchymatic, mechanical, integumental, conductor tissues) organography (root, stem, leaf, flower and fruit) and plant physiology (transport of water and other substances in the plant; hormones; energy and vital processes; the role of plants in the biosphere, photosynthesis, cellular respiration), basic knowledge will be provided on plant systematics and taxonomy, metagenetic cycles, materials and study methods and the basic characteristics to identify the most important families and species of agricultural interest. The area of production sciences and food technologies includes the teaching Cultivation methods and quality of herbaceous productions (6 CFU) whose objective is to provide students with fundamental scientific and methodological knowledge on the main aspects governing agricultural crop production. In particular, through the study of the principles of ecology, agronomy and the different cultivation methods and relative quantitative-qualitative characteristics of the main herbaceous production chains, students will be able to really understand the mechanisms and management techniques of the production processes and draw more aware judgments regarding the

concepts of quality, food safety and sustainability of primary productions. The acquisition of such knowledge will be able to guide the choice of raw materials for fresh consumption, for transformation and/or for the various gastronomic preparations in a careful and aware manner for the purposes of their profitable promotion and valorisation. Subsequently, a course on Qualitative aspects of tree fruits (6 CFU) is envisaged, aiming at transferring the cultural elements underlying the diversity of fruits that can now be found on the global market; at providing the fundamental knowledge to understand the probable geographical origin of the various fruits; at making students aware of the main interventions to which they are subject today for the purpose of correct management in the various post-harvest phases (storage, packaging, transport, distribution); at providing the skills to determine the qualitative characteristics to evaluate the suitability of a fruit for its intended use (direct consumption, transformation). For the aforementioned purposes, the essential objective of this teaching is to provide the knowledge of the various stages of the supply chain which a fruit must undergo “from the field to the table" to meet consumer expectations. Students will be given the opportunity to learn, for the various species of fruits, the fundamental biological elements of maturation and the indices to define the various (physiological/commercial) degrees. Also, through laboratory activities, students will have the opportunity to acquire the simplest and most immediate methodologies to define the ripening indices for the different fruits and the effects on their qualitative characteristics.
Through the organization of seminars held by teachers with proven experience, students will learn the techniques and criteria for evaluating the sensory properties and the overall organoleptic characteristics of fruits as well as of the main derivatives of the transformation, according to artisan techniques, developed by the local tradition and technological processes established on a global scale. The knowledge and skills that students will acquire will enable them to choose, in a targeted way, for each species and in relation to the final destination of the product, the most suitable batches of fruit. Furthermore, an integrated course of Horticultural Productions and Mushrooms in gastronomy is provided (9 ECTS). The quality horticultural production module aims to provide basic knowledge on the cultivation of the main horticultural crops and on the variability and typicality of their products in relation to environmental contexts, production systems and the varietal framework. In particular, the different periods of production, the morphological, qualitative, product and technological characteristics of the main vegetables will be highlighted. This information constitutes the tool for the characterization and enhancement of the raw materials to be used in the context of the respective agro-food chains. The Mushrooms in gastronomy module provides students with the necessary knowledge on the recognition of edible wild mushrooms, cultivation techniques, the marketing of mushrooms and their use in gastronomy. In the production area, the teaching Science and technology of food and wine products (6 CFU) provides students with the basic knowledge of the production and conservation technologies of food and beverages, as well as the knowledge and application of analytical techniques to evaluate the main chemical-physical and compositional characteristics. The teaching Sensory analysis of food and beverages (6 CFU) aims to transmit to students a series of theoretical and practical tools useful for their inclusion in the job market. Students will be provided with the tools to use the various sensory analysis techniques of food and beverages, to develop an experimental design, to statistically process and to interpret the data.
The Food Microbiology teaching (8 CFU) provides the basics of general and applied microbiology, for the agro-food sector, through the study of microbial morphology, physiology, genetics and taxonomy and the understanding of the main functions of the various microbial groups of foods with particular reference to pro-technological cultures used as starters in the agri-food industries. The course, through practical exercises, aims to give the student the necessary manual skills to start working in a microbiological laboratory and to perform quantitative/qualitative analyses of food samples, to select and manage the starter cultures to be used in the production of fermented foods. The production area also includes animal production: in particular, the teaching Zootechnics and genetic traceability of animal production (6 CFU) provides the knowledge and technical-scientific assumptions of molecular genetics at the basis of modern traceability methods (individual, species and breed) of animal products along the entire production chain, as well as the methods of genotyping, genetic identification and molecular diagnostics applied to animal species of zootechnical interest. Students will learn the technical procedures necessary for the traceability analyses of animal production. The genomic technologies applied to the conservation of zootechnical biodiversity, and the valorisation of productions will be illustrated. The integrated course Quality and inspection of foods of animal origin (12 credits) consisting of the Food Hygiene and Inspection module aiming at providing students with the (Community, national and regional)regulatory, theoretical (with reference to the concept of health and hygiene assessment and food safety) and operational (in terms of research and processing of technical, production and process data) tools necessary to formulate judgments on the hygienic-sanitary suitability of food matrices. The other module, Quality of animal production, provides knowledge on the parameters that identify the quality of the products obtained from the main species of zootechnical interest and on the factors influencing them. The role that the technical-organizational choices of farms and conservation and transformation structures play in terms of the quality of zootechnical products is studied. Finally, the production area includes the food composition module, belonging to the course Biochemistry and Food Chemistry (9 CFU), providing students with the knowledge of the chemical structure and the functional and nutritional properties of the substances constituting the main foods, as well as of the chemical reactions that occur following the technological treatments of transformation and conservation, foreseen by the Course program. Furthermore, the course aims to give students the tools for a correct knowledge of a food label, in terms of compliance with current European legislation, to evaluate possible food fraud. Particular attention will be paid to the knowledge of analytical techniques for quality control and for the recognition of food fraud. The course aims at providing students with a series of theoretical and practical knowledge for their future inclusion in the professional activity. With respect to historical, philosophical, and linguistic sciences, the Course provides the teaching Semiotics of food (6 CFU) addressing the issues related to the media representation of food, exploring it from the point of view of paper publishing, food and wine journalism, advertising, of television, cinema, digital media, restaurants, diets, objects. Secondly, it will pose the problem of food as a language, proposing the analysis of some iconic dishes of the Italian and Sicilian tradition, including saffron risotto, caponata, beccafico sardines, Sicilian rolls. Lastly, the course will offer an in-depth study of the problem of the inheritance of food, addressing the relationship between nature and culture, the rhetoric of organic farming and that of oenological narratives in cinema. With respect to legal economic sciences and socio-

political sciences, the teaching Economics of food and wine products (6 CFU) which provides students with the tools to understand the functioning of the national and international agri-food system from a sectoral and supply chain perspective . In particular, the course aims to develop knowledge of issues relating to the role of the agri-food system in the process of economic development, the characteristics of supply and demand for food products, the functioning and organisation of the agri-food system and of the companies that are part of it, the deepening of the role that food and wine products have in the conservation of the environment, in sustainability, in the promotion of rural and territorial development and in the protection of health. In the same area, the teaching of Sociology of food consumption (6 CFU) aims to provide students with the knowledge and skills useful for understanding the main dynamics currently affecting food consumption styles. It also aims to provide students with useful tools for analysing consumption data that can also be obtained from secondary statistical sources. A further educational objective is to enable students to understand the dynamics through which the mass media create opinions and influence purchasing and consumption behaviours, defined as "significant" to which the consumer attributes more value. Furthermore, in the integrated course of Marketing and Corporate Governance CI (9 CFU), the Food and Wine Marketing module provides students with the knowledge and tools for food and wine marketing, in relation to the main factors characterizing the product and its distribution, and the ability to identify the tools to implement appropriate strategies through the marketing plan. The Corporate strategy and policy module aims - mainly - to provide the basic elements for identifying the sources of competitive advantage and success of corporate strategies, as well as for reading and drafting an entrepreneurial business model. It also aims to make people understand the logic of the reticular functioning of business systems and the genesis of the individual business reality. The course also aims to stimulate an ethical reflection on entrepreneurial behaviour, by highlighting the connection between the exercise of so-called entrepreneurial virtues and business success.

With respect to biomedical, psychological and nutrition sciences, the module of Biochemistry of nutrition, belonging to the course of Biochemistry and food chemistry (9 CFU), provides students with the basis for understanding: the biochemical and nutritional role of the molecules contained in foods commonly used in human nutrition, the way in which they are digested, absorbed and processed from a metabolic point of view, the hormonal regulation of these processes and the metabolic interrelationships between the various organs.

Furthermore, in the integrated course Physiology and internal medicine (9 ECTS), the Human Physiology and Nutrition module provides the understanding of the fundamental physiological processes for the digestion and absorption of nutrients and the related nervous and humoral control mechanisms that condition them, the knowledge of the macro and micronutrients of foods, the ability to determine their nutritional value, the knowledge of the nutrient intake levels necessary to set up a balanced diet based on the physiological condition (school age, athlete, elderly), as well as the knowledge of body composition, the concepts of basal metabolic rate and energy expenditure necessary to be able to set up a balanced daily diet based on the present physiological condition useful for maintaining an adequate state of health. The Internal Medicine module applied to the human sciences, provides the basic knowledge of the main internal diseases related to nutrition, ensuring the student understands the reasons that drive medical personnel to indicate the adoption of a specific diet and the importance of correct application thereof.

Finally, the course on Nutrition and health (6 CFU) aims to provide knowledge relating to the relationships between nutrition, lifestyles and the main diseases of interest also by diffusion, including the field of pathophysiology, diagnostic methodology, prevention and dietetic treatment in clinical nutrition. The course also privileges the interdisciplinary aspects of the dietetic issues, providing cultural bases, including data collection and communication methodologies, for educational intervention activities in the nutritional field, including programs and campaigns aimed at promoting healthy lifestyles.

The Course also offers four recommended elective courses such as Food Anthropology (6 CFU), providing the basic knowledge on the history of Food Anthropology; examining the main theoretical orientations and methodological approaches of this disciplinary field useful for the critical analysis of food systems; providing the basic skills for conducting surveys on the relationship between territories and agri-food production, exploring and critically interpreting contemporary phenomena such as agribusiness and agroecology, assessing the relevance and effectiveness of the ethno-anthropological perspective, examining how and to what extent the production, preparation and consumption of food are cultural acts that determine, influence, transform and define individual and collective identities. evaluating cultural differences in relation to food diversity and the dynamics that guide food consumption, investigating the symbolic aspects of food, the relationship between practices and knowledge and food, as well as their transmission, the relationship between food and identity. The second teaching, Aromatic and medicinal plants in gastronomy (6 CFU), aiming to illustrate the importance of these plant species in gastronomy. The third elective teaching, Food and Religions (3 CFU) aims at explaining the role of food in different religions. The fourth course, Local Food and Wine Promotion Strategies (3 CFU) provides students with the link between food and wine and local development.

Each course credit consists of 10 hours of assisted teaching activities (70% frontal teaching and 30% exercises, laboratory activities and technical visits).

The acquired knowledge, skills and competences will enable students to develop the self-learning and continuous updating abilities, through the consultation of scientific publications in the sector and to attend both first-level master university Master courses and 2nd cycle degree courses.

The teachings follow a specific order, to provide the student with a logical sequence of knowledge and skills that can be acquired. Each year is divided into two semesters.

The coordination of integrated courses is carried out with particular attention to the case of integrated courses including disciplines belonging to different scientific-disciplinary sectors. These teachings will be activated to complete the student's training in compliance with scientific, cultural and professional affinities and with full integration of the adopted teaching methods.

The fragmentation of teaching activities, in compliance with the university education regulations, was in any case limited to only 6 teachings.

The educational regulations of the Degree course will indicate recommended propaedeutics in compliance with the orderly and sequential acquisition of knowledge and skills.

Professional opportunities

Functions:

- managing technical and commercial, research and development sectors of agro-food companies producing typical and gastronomy products, and catering companies.
- planning interventions for the enhancement of food and wine products and services, with particular attention to excellences.
- management and planning activities in consortia for the protection and enhancement of typical products and/or in consulting companies or private offices operating in the food and wine tourism sector.
- management activities in distribution sectors, including e-commerce.
- media communication activities, namely in advertising and market research, gastronomic literature.
- organizing events related to the food and gastronomic resources of the area.

Skills:
- modelling of agri-food systems, including the organization and interpretation of experimental and production data.
- evaluation of the chemical composition of foods and of the interactions among the different components of the food matrix.
- knowledge of food production techniques and their use for the improvement of finished products.
- knowledge of the biochemical/metabolic/nutritional role of food components and of the relationship between proper nutrition and health in individuals as well as in population groups.
- evaluation of factors capable of influencing consumers' food choices and nutritional correctness in catering.
- economic and financial management of the food and wine industry.
- ability to provide strategic orientations to food and wine and tourism companies, as well as policies for innovation and sustainability in food and wine.
- presentation and communication techniques of the peculiar aspects of food and wine preparations.
- media language; aspects and possibilities of promoting food and wine products, also in close connection with the history and geography of the territory.

Professional opportunities:
Graduates in Gastronomic Sciences find employment in:
- production and marketing companies in the food and wine sector.
- public and private service companies providing advice and support for the development of local and Made in Sicily food and wine.
- public bodies such as Ministries, Regional Departments, Professional Associations of the Category.
- national and international governmental and non-governmental bodies operating in the agri-food sector, including aid and development programs in transitional or developing countries (FAO, WFP. WOLRD BANK, etc.).
- research institutions in the field of food and wine (history, culture, traditions, production techniques).
- bodies responsible for the dissemination and development of excellent food and wine.
- media in the gastronomy and tourism sector.

Final examination features

The final test has the objective of assessing the level of maturity and critical skills of the undergraduate, with respect to learning and to the acquired knowledge, on completion of the activities provided by the course syllabus

Subjects 1 ° year	CFU	Sem.	Val.	Att.	SSD	TAF
18692 - ELEMENTS OF GENERAL AND INORGANIC CHEMISTRY *Marzullo(RD)*	6	1	V		CHIM/06	A
22825 - FOOD AND WINE ECONOMICS *Sgroi(PA)*	6	1	V		AGR/01	C
22831 - PLANTS IN GASTRONOMY *Domina(PA)*	6	1	V		BIO/03	A
22832 - PPRINCIPLES OF STATISTICS FOR FOOD SCIENCES	6	1	V		SECS-S/02	A
20036 - ENGLISH LANGUAGE	6	1	G			E
22894 - HISTORY AND GEOGRAPHY OF FOOD - INTEGRATED COURSE	11	2	V			
- CULTURAL GEOGRAPHY OF FOOD *Mercatanti(PO)*	*6*	*2*			*M-GGR/01*	*A*
- HISTORY OF FOOD CULTURE *Santoro(PA)*	*5*	*2*			*M-STO/01*	*A*

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Subjects 1 ° year	CFU	Sem.	Val.	Att.	SSD	TAF
22828 - HORTICULTURAL PRODUCTS AND MUSHROOMS IN GASTRONOMY - INTEGRATED COURSE	9	2	V			
- MUSHROOMS IN GASTRONOMY	*3*	*2*			*BIO/02*	*C*
- QUALITY HORTICULTURAL PRODUCTS *La Bella(PO)*	*6*	*2*			*AGR/04*	*B*
22829 - ZOOTECHNICS AND GENETIC TRACEABILITY OF ANIMAL PRODUCTIONS *Mastrangelo(RD)*	6	2	V		AGR/17	B
Free subjects (suggested)	6					D
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Subjects 2 ° year	CFU	Sem.	Val.	Att.	SSD	TAF
22823 - BIOCHEMISTRY AND FOOD CHEMISTRY - INTEGRATED COURSE	9	1	V			
- BIOCHEMISTRY OF NUTRITION	*3*	*1*			*BIO/10*	*C*
- FOOD COMPOSITION	*6*	*1*			*CHIM/10*	*B*
23774 - ELEMENTSOF FOOD LAW *Pisciotta Tosini(PO)*	6	1	V		IUS/03	B
22830 - QUALITATIVE TRAITS OF TREE FRUITS *Massenti(RD)*	6	1	V		AGR/03	B
14184 - INTERNSHIP	11	1	G			F
22826 - HERBACEOUS CROPS CULTUVATION METHODS AND QUALITY *Iacuzzi(RD)*	6	2	V		AGR/02	B
23773 - PHYSIOLOGY, NUTRITION AND INTERNAL MEDICINE - INTEGRATED COURSE	15	2	V			
- ALIMENTATION AND HEALTH	*6*	*1*			*MED/49*	*B*
- HUMAN PHYSIOLOGY AND PHYSIOLOGY OF NUTRITION	*6*	*2*			*BIO/09*	*B*
- INTERNAL MEDICINE APPLIED TO HUMAN SCIENCES	*3*	*2*			*MED/09*	*C*
Free subjects (suggested) II	6					D
	59					

Subjects 3 ° year	CFU	Sem.	Val.	Att.	SSD	TAF
23772 - ANIMAL BIODIVERSITY APPLIED TO GASTRONOMY *Cammarata(PO)*	6	1	V		BIO/05	A
22898 - SENSORY ANALYSIS OF FOOD AND BEVERAGE *Corona(PO)*	6	1	V		AGR/15	B
87124 - FOOD MICROBIOLOGY *Francesca(PA)*	8	2	V		AGR/16	B
22893 - FOOD SEMIOTICS	6	2	V		M-FIL/05	B
22895 - MARKETING AND CORPORATE GOVERNANCE - INTEGRATED COURSE	9	2	V			
- FOOD AND WINE PRODUCTS MARKETING *Altamore(PA)*	*6*	*1*			*AGR/01*	*C*
- BUSINESS STRATEGY AND POLICY *Ruisi(PO)*	*3*	*2*			*SECS-P/07*	*C*
22890 - QUALITY AND INSPECTION OF FOOD OF ANIMAL ORIGIN - INTEGRATED COURSE	12	2	V			
- FOOD HYGIENE AND INSPECTION	*6*	*2*			*VET/04*	*B*
- QUALITY OF ANIMAL PRODUCTS *Alabiso(RU)*	*6*	*2*			*AGR/19*	*B*

Legenda: Per. = periodo o semestre, Val. = Valutazione (V=voto, G=giudizio), TAF= Tipologia Attività Formativa (A=base, B=caratterizzante, C=Affine, S=stages, D=a scelta, F=altre)

Subjects 3 ° year	CFU	Sem.	Val.	Att.	SSD	TAF
22944 - SCIENCE AND TECHNOLOGY OF FOOD AND WINE PRODUCTS *Cinquanta(PO)*	6	2	V		AGR/15	B
05917 - FINAL EXAMINATION	6	2	V			E
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OPTIONAL SUBJECTS

Free subjects (suggested)	CFU	Sem.	Val.	Att.	SSD	TAF
22855 - ANTHROPOLOGY OF ALIMENTATION	6	2	V		M-DEA/01	D
22867 - FOOD AND WINE DEVEL *Sgroi(PA)*	6	1	V		AGR/01	D

Free subjects (suggested) II	CFU	Sem.	Val.	Att.	SSD	TAF
16621 - FOOD CONSUMPTION SOCIOLOGY	6	1	V		SPS/07	D
22866 - AROMATIC AND MEDICINAL PLANTS IN GASTRONOMY	6	2	V		AGR/02	D
24069 - SAFETY AND PROFESSIONAL RISK IN AGRI-FOOD PRODUCTION AND IN THE WORKPLACE	6	1	V		MED/44	D

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