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UNIVERSITÀ
DEGLI STUDI
DI PADOVA



The College of Agricultural Science
University of Padua



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Vision

The College of Agricultural Science shall be recognized for excellent teaching, research and outreach programs in agriculture, forestry, food sciences, and rural territory and environment protection.

Mission

The College of Agricultural Science offers high quality undergraduate, graduate and continuing education programs and conducts applied research and public service in selected areas of agriculture, forestry, food sciences, and rural territory and environment protection. Programs combine a science, technology and management focus with experiential learning. The College is committed to the University's vision of pre-eminence in its missions of discovery, learning, and engagement and seeks to enhance the ability of students to be successful in their chosen careers and to make positive contributions to the quality of life in their communities.

The College

The College of Agricultural Science is committed to being a leader in learning, discovery, and engagement to advance **agriculture, food, and environmental sustainability** for citizens and their communities. The scientific knowledge that undergirds agricultural production, food processing and manufacturing and the protection of natural resources emanates from the College.

The College of Agricultural Science

- is involved in agriculture and forestry enhancement, promoting environmental low impact and energy efficient techniques for cultivation, breeding, utilization and transformation, encouraging sustainable management of forests and plantations, stimulating quality and healthiness of productions.
- is involved in food production promotion, caring the production, processing, preservation and marketing of food and other agricultural products, promoting the viability of the agri-food industry and the rural economy, supporting oeno-gastronomy and food service.
- is involved in conservation and resource management, deepening the relationship between different environment constraints, considering the influence of agricultural and forest activities on biosphere resources, analyzing preservation strategies of natural and semi-natural habitat, preserving territory and landscape.

The College of Agricultural Science operates in **Agripolis** (Legnaro) in a **university campus** where research, scholarly and creative activities involve faculty, staff and students in projects to improve the educational process, discover new knowledge, find solutions to significant societal and industrial problems, communicate findings to industry and society at large and improve and develop new skills.

Students at College of Agricultural Science experience university education that transfers not only theory but also practice, based on training activity, laboratory works, field trips, relationships with farms, enterprises and industries. Great emphasis is given to stage activity through which students have the opportunity to face the job world and to test their abilities and attitudes.

The College of Agricultural Science cares about students needs, not only regarding their education, but also considering specific situations and conditions. Proper teaching supports and help are provided to part time students to allow them to face the study career and to complete it in due time. In the same way support is provided to disable students trough an ad hoc assistance.

The College of Agricultural Science with its **9 undergraduate degree courses** and **9 graduate degree courses** offers a

wide range of opportunities and gives an adequate flexibility in the education to the students.

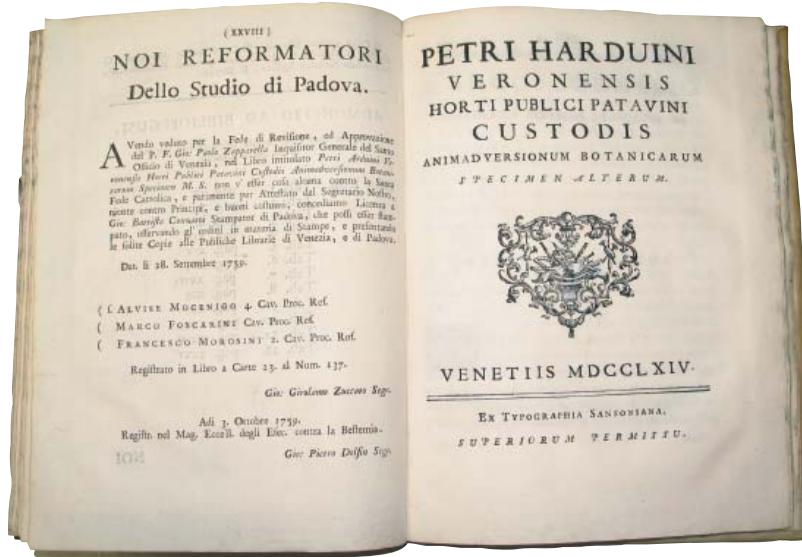
At the end of the study career the students become professionals equipped with strong analytical, problem-solving and critical thinking abilities making them adaptable to the changing requirements of the society. In fact students must become more than technically competent, they will acknowledge their obligations as global citizens, and strive to secure a sustainable and equitable future for all.



Strong roots into the past

When it was activated in November **1946** the College of Agricultural Science, with the **Degree in Agricultural Science**, represented the point of arrival of the evolution of the technical-scientific teaching in the agricultural field within the University of Padua; this evolution started in 1762 with the foundation of the **Chair of Agriculture** (*Cathedra ad Agriculturam Experimentalem*) and the subsequent establishment of the **Agricultural Garden**.

Because of some epizootics which decimated the bovine property of the Venetian Republic in the first half of the eighteenth century, the Senate of the Republic, which was strongly concerned about the food condition, established the first Chair of Agriculture in Europe at the University of Padua.



The teacher chosen for that Chair was **Pietro Arduino (1728-1805)** who had already been the “guardian” of the Botanic Garden and who claimed that *“agriculture is itself a part of botany, a science which include not only information about plants, but also about lands, climate and cultivation which search where to make plants living and flourishing”*.

It was Arduino who suggested to establish the Agricultural Garden, which began to work, even though in a precarious way, in **1766** on seven fields, which had been rented in Santa Croce.

The scientific activity which developed in the Agricultural Garden and as a result the subsequent improvements in the Venetian agriculture

allowed Arduino to obtain important extensions of the structures, reaching in **1792** the landed situation known as the **“Fields of the public School of agriculture”**

represented in the detailed map of the city of Padua by Giovanni Valle. At that time the Garden had 645 species of cultivated plants and 240 species of spontaneous plants.

With the death of Arduino, it ended the pioneering period of the life of the Agricultural Garden and of the Chair which anyway greatly affected the progress of Venetian agriculture, so that it was recognized that *"...the inhabitants of the Venetian dry land in the last thirty-five years of the past century more than any other Italian people had improved a lot their agricultural skills..."*.

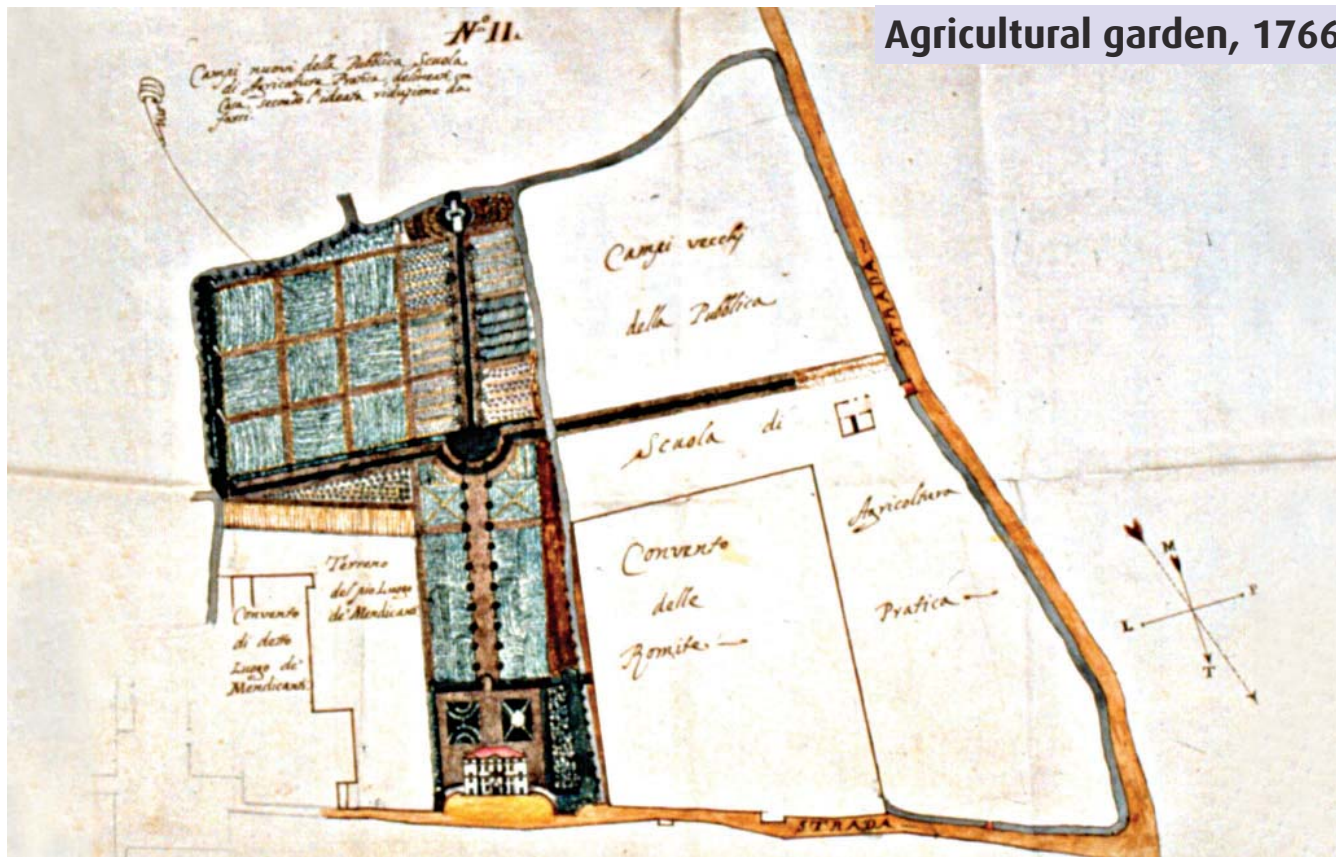
The following direction of the Garden (1829-54) was given to the abbot **Luigi Configliachi** who distinguished himself more for the improvements of the estates and the increase in the teaching-scientific aids than for the research activity.

When in 1854 Configliachi was appointed University Rector, the Chair and the direction of the Garden were given to **Antonio Keller**. After the annexation of Veneto to Italy, in **1870** the Chair was cancelled because the legislation of the Italian Kingdom did not provide the teaching of agriculture within university subjects. Keller could keep *ad personam* the title of "Professor of Agriculture and Farms Evaluation" which had been assigned to him and he could carry on his teaching activity within the Training School for Engineers, which was established in 1875. Even the Agricultural Garden, which

became one of the scientific body supporting the Chair of Rural Economics and Estimate, converged in that School. By that time the Agricultural Garden went under further reformations losing of importance in the field of agricultural teaching.

The spirit of the Agricultural Garden was recovered after the Second World War when the Ministry of Education decided to established the College of Agricultural Sciences and approved the beginning of the courses in the **academic year 1946/47**.

The structures of the College found a seat in a new building in the area of the abandoned Agricultural Garden, in **6 Gradenigo Street**, connecting from an ideal point of view the old institution with the new born one.



The Agripolis Campus

The College of Agricultural Science together with the College of Veterinary Medicine forms the university campus "Agripolis". The whole campus area covers about 100 hectares and includes the departments buildings, the lecturing structures, the experimental farm "Lucio Toniolo" and the Pozzoveggiani model farm for organic products, the Regional Agency for Agriculture ("Veneto Agricoltura") and the Regional Institute for Animal Health and Hygiene.

The College of Agricultural Science is subdivided in 4 departments:

Department of Environmental Agronomy and Crop Production

Tel. +39 049 827 2825/2824 Fax +39 049 827 2784
www.daapv.unipd.it

Department of Agricultural Biotechnology

Tel. +39 049 827 2939/2940 Fax +39 049 827 2929
www.biotagr.unipd.it

Department of Animal Science

Tel. +39 049 827 2670/2664 Fax +39 049 827 2969
www.dsa.unipd.it

Department of Land Use and Agricultural and Forestry Systems

Tel. +39 049 827 2729/2633 Fax +39 049 827 2950
www.tesaf.unipd.it

On the campus "Agripolis" is situated the "Pietro Arduino" library that contains a rich collection of scientific journals, books and direct access to the main literature data bases. Furthermore the College disposes of computer labs, laboratories for chemistry, biology, microscopy, biotechnology, wood technology, cartography and CAD. In all buildings wireless internet is available for the free use of the students. "Agripolis" includes also a cafeteria, a restaurant and a students canteen, flats for student accommodation and sport facilities.

Two external campuses belong to the College: **the Campus of Castelfranco Veneto** for the study of Science and Culture of Gastronomy and Food Service as well as **the Campus of Conegliano** for the study of Viticulture and Enology.

Professional Prospects

Around 56% of the undergraduated students continue to study in one of the College graduate courses. A very large part of this students is combining their studies with professional activities, given that 21% of the students are employed elsewhere. Around 33% of the graduates are able to find employment within one year after finishing their study.

International Activities

LLP/Erasmus

The College of Agricultural Science promotes students exchange through the LLP/Erasmus programme, due to many partnership agreements set up with other European universities. At present, the College has established partnerships with the following countries: *Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, The Netherlands and Turkey.*

Within the LLP/Erasmus programme students stay at partner universities for periods from 3 to 12 months. During this time they are required to follow lectures, take examinations, and/or work within projects. Credits for the work done at partner universities are recognized by the College of Agricultural Science, which also helps with funding.

Erasmus Mundus

The College of Agricultural Science is currently participating into two Erasmus Mundus Master Programs, named SUTROFOR and SUFONAMA. Every year students from all over the world (European countries, Ethiopia, Ghana, India, Kenya, Thailand, Taiwan, USA, etc.) are taking part in these courses.

The MSc programme **SUTROFOR – Sustainable Tropical Forestry** is aimed at preparing qualified graduates to deal

with contemporary tropical forestry issues. It provides students with direct access to the best tropical forestry teaching in Europe.

During the first study year one of three partner institutions (Bangor, Copenhagen, Dresden) provides a thorough and broad introduction to sustainable tropical forestry. The first year ends with the Joint Summer Module which includes field work in a tropical country. For the second year students can choose freely among five specialisation options: Agroforestry systems (Bangor), Socio economics of tropical forestry (Copenhagen), Tropical forest management (Dresden), Environmental management and policies for tropical forests (Montpellier), Ethics and responsible production and trade of tropical forest products and services (Padova).

The specialization offered at the College of Agricultural Science on “**Ethics and responsible production and trade of tropical forest products and services**” is aimed to equip students for a career in an innovative field of work: ethics in forestry. The students will acquire skills with special reference to responsible trade and use of tropical forest products and societal marketing instruments. The growing focus on CSR, environmental communication, public participation and good governance in decision making related to environment and social aspects of forestry is leading to a growing demand for professionals and experts in this field.

The MSc programme **SUFONAMA – Sustainable Forest and Nature Management** is a two year world class integrated course taught in English, aimed at qualifying graduates to deal with the enormous challenges in sustainable management of natural resources.

During the first study year one of three partner institutions (Bangor, Copenhagen, Göttingen) provides a thorough and broad introduction to sustainable forestry and nature management. The first year ends with a compulsory Joint Summer Module, run as a two week excursion to a consortium country.

The second year takes place at one of the five partner institutions, depending on the research strength of each university: Conservation and land management (Bangor), Economic management of forests and nature (Copenhagen), Timber and non timber forest product use and processing (Göttingen), Scandinavian and East European forestry (Alnarp), Mountain forestry and watershed management (Padova).

The main aim of the programme at the College of Agricultural Science in **“Mountain forestry and watershed management”** is to equip students for a career in an innovative field of work: sustainable mountain forestry and low impact watershed management against alluvial floods. Therefore students will acquire personal and professional skills with special reference to nature oriented projects.

The lectures provide understanding in alpine environment, environmental planning in mountain forest area, GIS, manage the flood risk and river restoration in mountain watersheds.

Bilateral Agreements

The College of Agricultural Science has developed bilateral agreements with other universities in countries such as the United States, Canada, Australia, Brazil, Russia and many others. Moreover, the College has new cooperation projects with developing countries and funds are given to students for internships or thesis work in these countries.

The College has established an Office for International Relations for the assistance of foreign incoming students and to support Italian students opportunities to study abroad.



Undergraduate Degree Courses (3 years)

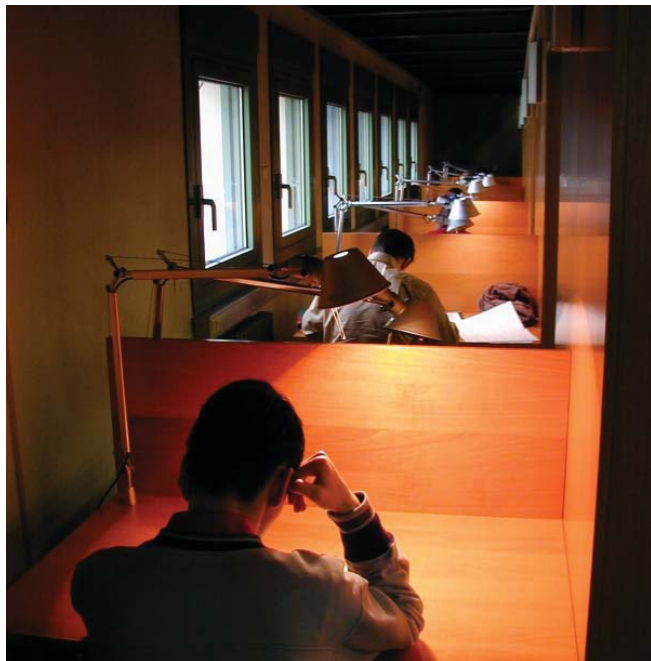
- Agricultural Biotechnology
- Agricultural Science and Technology
- Food Science and Technology
- Forestry and Environmental Technology
- Land and Landscape Restoration and Enhancement
- Viticulture and Enology Science and Technology

InterCollege course

- Animal Science and Technology
- Environmental Science and Technology
- Science and Culture of Gastronomy and Food Service

The College offers **preparatory courses** in the basic disciplines (mathematics, chemistry and biology) which give the possibility to familiarize with the new didactic system at the University and help to overcome possible difficulties in these subjects or to improve the personal preparation of the students. All undergraduated courses foresee a final examination which contains the discussion of a theses work and also pertaining the activities carried out during training activity.

Students which get an undergraduate degree have the possibility to proceed their studies within a graduate degree course. For the access of these courses students must have obtained a certain evaluation in the undergraduate degree and some other necessary competences achieved during their undergraduate studies.



Agricultural Biotechnology

Course objectives

The course is based on biotechnological subjects applied to agricultural and forest production.

Students will acquire knowledge in biological systems with particular reference to molecular structures, experimental operations that use cellular systems in order to obtain agricultural products and services, applications in the agricultural sector.

Other subjects taught include mathematics, statistics, information technology, physics and chemistry. Furthermore the course instructs students about scientific methodology for applied research and research and development of biotechnological products for the agricultural sector.

Subjects

Biochemistry, Biology (Cytology and genetics of agricultural and forest plants, molecular biology) Biotechnology (of agricultural and forest plants, Microbes and for plant protection), Chemistry (general, organic, inorganic and physical chemistry), Ecology, Physics, Applied informatics, English Language, Mathematics, Statistics, Marketing of agricultural and food products, General microbiology, Genetic and Biotechnological improvement of plants, Standards and Patents, Principles of animal biotechnology, Training activity.

Employment Prospects

Graduates will be able to operate in the development of biotechnological instruments for:

- quality evaluation of food products including the observation of genetically modified organism and diseases;
- environmental protection as well as qualitative and quantitative efficiency of agricultural processes;
- analysis, quality and safety of agricultural and zootechnical products.

The students could be employed in the agro-food industry and in environmental monitoring, at agencies for analysis, control, certification and research for the valorisation of food production and environmental protection.



Agricultural Science and Technology

Course objectives

Students will acquire knowledge which guarantees the complete management of activities and problems in the areas of agricultural and plant production, animal breeding and horticulture nursery. The scope of the study is furthermore the formation of professionals able to intervene in the sectors of safety, high quality and healthy production with reduction of waste and other environmental impacts to enhance sustainability of agricultural systems.

Taking into account the aspects of agricultural economics and ethics, the course provides profound knowledge of distribution and marketing of plant and animal products.

Subjects

Agronomy, Animal breeding, Animal and vegetation biology, Chemistry (general, inorganic and organic), Pomology, Crop production, Economics and farm management, General and applied entomology, Appraisal, Physics, Plant genetics, Applied informatics, English language, Mathematics, Agricultural engineering, Agricultural microbiology, Animal nutrition and feeding, Plant Pathology, Economic principles, Training activity.

Employment Prospects

Graduates will be able to pursue career in the following areas:

- management and technical roles in the agro-food industry, commercialization of products, production of goods and services for agriculture and retail;
- management in the public administration (regions, provinces, communes, territorial authorities, mountain communities and consortia) and private enterprises that deal with agriculture and ecological and environmental aspects related to agricultural activity;
- consulting for agriculture businesses and private and public organizations



Food Science and Technology

Course objectives

The course guarantees a complete vision on the activities and problems of food and beverage, from the production to the consumption as well as aspects of food safety, quality and hygiene, reduction of waste and environmental impacts, taking into account aspects of agricultural economics and ethics, conservation, transformation and distribution of food.

Subjects

Human nutrition, Sensorial analysis, Agricultural biochemistry, Biology, Biotechnology of fermentation, Chemistry (physical, general, inorganic and organic), Economics and management, Applied informatics, Food control, English language, Technology and processing systems of the food industry, Mathematics and statistics, Marketing of agro-food productions, Microbiology (general and food), Animal and plant production, Production quality and food evaluation, Food technology, Food Technology: animal and vegetal production, Training activity.

Employment Prospects

Graduates will be able to pursue career in the field of management and control of food production, conservation, transformation and distribution as well as in the administration

of food and beverage processing enterprises with the objective to optimise qualitatively and economically the food production, guaranteeing the sustainability and eco-compatibility of the industrial activities.

Furthermore graduates could operate in institutions for analysis, control, certification and research for the safeness of food and in enterprises for provisioning of raw materials, technology and equipment, ingredients and semi finished materials for the food production.



Course Objectives

Students will acquire a deep knowledge about the management, protection and valorisation of forests, forest products and mountain areas, as well as the economic organisation and productivity of the wood production chain.

The students learn to take into account questions of biodiversity and protection of natural resources in economic decisions and therefore they will receive knowledge about adapted instruments for interventions in the ecological dynamics of forests and grasslands.

The study includes also questions about the management of grasslands for animal grazing, characteristics of the wood processing industry and commercialization of forest products.

Subjects

Animal and plant biology, Chemistry (general, inorganic and organic) Physics, Applied informatics, English language, Mathematics, Principles of economy, Silviculture, Training activity, Management of alpine areas, Forest plant taxonomy, Forest inventory and Forest management planning, Forest ecology, Applied engineering, Forest and environmental law, Mineralogy and geology, Forest pathology, Special silviculture,

Watershed management and torrent control, Topography, Forest zoology, Wildlife management and fisheries, Animal production in mountain areas.

Employment Prospects

Graduates will have competence in technical planning as well as management and control in public or private enterprises which work in the field of:

- sustainable management of forest resources and environmental protection,
- planning and realization of interventions for forest health,
- wood processing, transformation and commercialization,
- maintenance and control of agro-forest land and urban green areas,
- wildlife management,
- protection and preservation of the landscape including hydrological systems,
- management of grasslands for agricultural production in mountain areas
- Other services in the wood production chain

Land and Landscape Restoration and Enhancement

Course objectives

The course trains students to work in the field of valorisation and protection of the territory and its landscape.

The course is subdivided in two different programmes: *Land Protection and Restoration* and *Landscape, parks and gardens*, in order to provide profound knowledge to address different fields of employment.

Subjects

General and territorial agronomy, General biology, Chemistry (general, inorganic and organic), Physics, Geomorphology and Physical geography, Applied informatics, Mathematics, English Language, Training activity.

Land Protection and Restoration: Agricultural economics, Cartography and geographical information system, Architectural composition, Environmental law, Ecology, Land and environmental resource valuation, Hydrology and hydraulics, Applied engineering, Bioengineering techniques, Ecological countryside management, Topography, Protection of agricultural landscape.

Landscape, parks and gardens: Vegetation biodiversity, Landscape graphics, Entomology of ornamentals, Appraisal, Hydraulics, Herbal surfaces and green roofs, Irrigation and drainage, Ornamental plants pathology, Ornamental plants production, Planning of green areas

Employment Prospects

Graduates will be able to carry out analysis and interventions of landscape, territory and environment, utilizing the latest survey techniques for detection and description of territorial and environmental data.

Moreover they can be occupied for planning works, projecting, construction, management and valorisation of the landscape and the environment.



Viticulture and Enology Science and Technology

Course Objectives

Students acquire knowledge about the production techniques and problems around the viticulture. In particular students will study grape processing techniques, refinement methods, bottling, variety selection, vineyard setup, vine treatment and protection as well as marketing of vine and its derivatives.

The course handles also the aspects of safety production, quality and healthiness of viticulture products as well as the reduction of waste and other environmental impacts, taking into account economics and ethics of the production process.

Students will learn how to analyze wine chemically and by means of scent, taste, colour and texture.

Subjects

Agronomy, Animal and plant biology, Chemistry (general, inorganic and organic), Quality control of wine, Physics, Economics, Enology, Agricultural entomology, Genetics, Management and marketing of wine and vineyard production, Legislation and wine processing, Applied informatics, English language, Mathematics, Vineyard mechanisation, Microbiology (general and wine), Plant pathology, Food technology, Viticulture, Training activity.

Employment Prospects

Graduates will be able to pursue career in the sector of management and control in the cultivation and production of grapes, the transformation in wine and derivatives, conservation, distribution and administration with the objective to optimise qualitatively and economically the viticulture products, guaranteeing the sustainability and eco-compatibility of the industrial activities.

Graduates can be employed in enterprises for production of grapes and wine, in the oenological industry, public and private administration for wine analysis, control, certification and research for the valorisation of oenological products.

Furthermore they can be employed in other sectors connected to the production of viticulture products like enterprises for provisioning of raw materials, technology and equipment, micro organisms, adjuvant and ingredients.



Animal Science and Technology

This course is organized jointly by the **College of Agriculture Science and the College of Veterinary Medicine.**

Course Objectives

The course provides competences in animal breeding for agricultural and other purposes as well as the management of agro – zootechnic enterprises.

Particular attention is given to genetics, nutrition, reproduction, hygienic aspects and health, organisation and management regarding the nutrition of animals of agricultural interest, sports or pets. The students learn to combine the most modern technical aspects with environmental friendly production and problems connected to sustainability and globalization.

Subjects

Nutrition of pets, Nutrition of horses, Biochemistry and general chemistry, Cattle farming, Cytology, Histology and anatomy of the animals, Physiology and reproduction techniques, Production of forage, Applied informatics, English language, Zootechnical installations and mechanisation, Storage and conservation of animal foodstuffs, Mathematics and biomathematics, Animal breeding and genetics, Nutrition, feeding and rationing, EU Agricultural Policy, Prevention of diseases and hygiene, Molecular biology, Principles of

agronomy and crop production, Economics, Pig farming Technology, Zooculture.

Employment Prospects

Graduates can pursue career in the areas of management and control of nutrition of animals for agricultural production, sports or pets.

The professional activities will be carried out mainly in agro-zootechnical enterprises or in enterprises within the production chain of food of animal origin.

Furthermore graduates can operate in private enterprises or public institutions for animal breeding, nutrition and food processing.



Environmental Science and Technology

This course is organized jointly by the **College of Agriculture Science and the College of Mathematical, Physical and Natural Science**.

Course Objectives

Environmental Sciences and Technology is an integrated and multi-disciplinary degree programme based on the areas of expertise in Natural Sciences and Agricultural and Forestry Sciences.

Graduates will gain knowledge in environmental matters and good practice in scientific methods for the analysis of both natural and anthropogenic modified systems, their management and their protection. They will learn to carry out technical, operational or professional tasks in activities related to monitoring, classification, analysis, restoration and conservation of abiotic and biotic components of natural terrestrial and aquatic ecosystems. The study will be accompanied by laboratory work and formation during training periods.

Subjects

Environment and population, Environment and production of plants, Territorial analysis, Arthropods in natural and

anthropogenic systems, Biology, Biometeorology, Chemistry (analytical, environmental, physical, general, inorganic and organic) Applied ecology, Economics and environmental estimation, Physics, Phytopharmacy and environment, Environmental geochemistry, Hydrology and underground exploration, Environmental legislation, Parasitic illnesses in natural and anthropogenic influenced ecosystems, Mathematics, Environmental microbiology, Identification of organisms, Soilsience, Zootechnical and environmental systems.

Employment Prospects

Graduates will be able to operate as techniques for environmental activities in public administrations or services for Control, monitoring or surveillance of abiotic and biotic components of environmental resources, Management of interventions of environmental protection and recovery activities (assessor for the environment, agencies for environmental protection, public or private research institutions, enterprises for environmental services).

In the sector of agriculture graduates can be occupied for environmental control, in particular the impact of crop and stock-breeding practices on soil, water and air quality in primary sector enterprises.

Science and Culture of Gastronomy and Food Service

This course is organized jointly by the **College of Agricultural Science, College of Economics, College of Arts and Philosophy.**

Course Objectives

The course provides knowledge and practical skills which guarantee a complete vision on the activities and problems regarding the sectors of gastronomy and catering. In particular students will learn to occupy the role of assistant director at restaurants, catering or food service companies of typical agricultural products, and to integrate technical competences in economic and cultural understanding.

Subjects

Agricultural sciences and technology, Informatics, Food inspection, Institutions and regulations, Quality of vegetable and animal food production, English language, Mathematics, Food microbiology, Organisation of the enterprise, Seminar on gastronomy, History of food science, History of agricultural, Summer school, Gastronomy technology, Food nutritional value, Human resources management, Training activity.

Employment prospects

Graduates can basically pursue career in the sector of gastronomy and catering, in agencies and administrations

for promotion and valorisation of food products as well as in enterprises operating in the areas of communication and marketing of products and gastronomic events.



Graduate Degree Courses (2 years)

- Agricultural Science and Technology
- Animal Science and Technology
- Food Science and Technology
- Forestry and Environmental Sciences

InterCollege course

- **Food Biotechnology**

- **Local Development**
- **Marine Biology**
- **Science and Technology for the Environment and Territory**

InterUniversity course

- **Viticulture, Enology and Wine Marketing**

All the graduate degree courses foresee a final examination which contains the discussion of a theses work concerning the results from an original research work.



Course Objectives

The course is based on the solid preparation about theoretical – scientific aspects received during the undergraduate studies. The course provides advanced knowledge in the field of agricultural systems and animal production, formation of professional capacity to be able to use the wide spectrum of knowledge for interpretation, description and innovative resolution of problems in the field of agriculture and animal production with particular emphasis on the relations between production techniques and the environment.

Subjects

Plant breeding; Agricultural mechanisation; Advanced informatics; Marketing of the agricultural enterprise; Perception and acquisition of nutrients; Fruit tree production; Sustainable horticulture; Irrigation systems engineering.

Specialization in Production and pest control: Experimental Methodology; Biology and management of pest; Weed science principles; Field crop ecophysiology; Fruit tree physiology; Principles and applications of biological control of pests; Acarology and Nematology; Principles of virological and bacterial plant diseases;

Plant breeding; Soil Fertility and Plant Nutrition. *Specialization in Management:* Environmental agronomy; Rural hydraulics; Swine production; Zooculture; Agricultural politics; Appraisal 2; Plant breeding; Agricultural mechanisation; Recovery and recycling of biomasses; Agricultural law; Environmental agronomy; Protected cultivation.

Employment Prospects

Graduates will be able to carry out activities in planning, management, control, coordination and formation of processes in agriculture and animal production, to respond to the requirements of the market and the consumer regarding the quality and sanity of the products, the respect of the environment including the value of landscape and historical-cultural of the agricultural territory. Furthermore graduates will be competent for interventions in the phase of projecting, programming and realization of productive processes in agriculture and animal production as well as for their optimization and valuation under economic and environmental aspects.

Course Objectives

The course provides advanced knowledge and professional capacity to enable the graduates to take on complex activities in planning and coordination in the field of agro – animal production, focussing on questions of economic, social, environmental and, in increasing evolution, of ethical relevance. The course provides therefore the formation and knowledge which allow the graduated to insert and integrate themselves into the labour market with as autonomous, competent and capacity for critical evaluation, individuation, submission, projection, coordination and management of actions for

- 1) melioration of feeding practices;
- 2) harmonization of practices in animal production with requirements on protection, safeguard and conservation of biodiversity and natural resources taking into account also economic impacts of the proposed action on the farm level and for the whole territory;
- 3) valorisation of animal production (product quality, processing and traceability) in various production chains.

Subjects

Product quality and processing quality: Milk and derivatives, Meat and derivatives, Fish and eggs, Principles of hygiene

and sanity of food of animal origin; Advanced informatics; Summer school: The animal product chain and seminars of animal science and technology; Economic valuation of rural areas; Butchering and commercial dissection of meat; Zootechnique biodiversity and traceability of animal products, Environmental impact of feeding techniques; Agronomic utilization of effluents of animal production.

Employment Prospects

Graduates will be able to carry out activities in all kind of enterprises along the production chain from the purchase of primary products, feeding, production, conservation, transformation and commercialization of products of animal origin including retailers, organizations of producer associations, public and private agencies for planning, analysis, control, certification as well as for scientific investigations about the preservation and valorisation of animal production and the environment and in organizations for formation and other service firms.

Food Science and Technology

Course Objectives

The course provides advances knowledge and the professional competence relative to the implementation and coordination of activities in the agro – food sector as well as the capacity to guarantee, using innovative methods, the security, quality and sanity of food.

Preferably an interdisciplinary approach is applied, which is orienteering on the acquisition of transversal knowledge which enables the graduates to valuate and resolve complex problems regarding the agro – food sector in all of its diverse aspects.

Subjects

Protection of food products from pathogens; Protection of food products from arthropods; Isolation, characterization and propagation of micro-organisms for food production; Confection of food; Traceability and security of food; Principles of food processing and production machinery; Advanced informatics; Quality of animal products; Methods for food analysis; Economy and marketing of the agro-industrial enterprises; Chemistry, Biochemistry and physics of foods; Food biotechnology; Sensory analysis; Quality of foods and consumers health; Security and management of waste; Supply chain of agro food products.

Employment Prospects

Graduates are highly qualified to take on tasks in administration, management and planning and will also be able to solve complex problems in all sectors of the food industry from production and transformation to the conservation of food products. Furthermore graduates can find employment at retailers, in the restaurant and catering industry, in public and private organizations which deal with planning, analysis, control, certification and formation as well as research and development of innovative processes and products in the field of agriculture and food industry.



Course Objectives

The course provides the profound bases in the field of analysis, interpretation and comprehension of the interactions between the environment and forest related components of the territory. All fields of activities are linked to the sustainable utilization of the territory, the natural resources and the conservation of biodiversity. Special attention is given to forest ecosystems, grasslands and water resources especially in mountain areas.

Subjects

Specialization in Forestry and Environmental Science: Economic analysis, politics and environmental forest planning; Forest management; Ecological Countryside Management; Advanced informatics; Forest genetics; Fluvimorphology and river restoration; Applied zoology; Health and wellbeing of forest plants; Cultivation of mushrooms in the forest; Environmental indicators and applications of cartography; Applied botany; Arboriculture for wood production and energetic use of biomass; Mediterranean silviculture; Applied ecology of wildlife; Environmental factor analysis; Application of alpine meteorology.

Specialization in Protection of the Territory: Economic analysis, politics and environmental forest planning; Forest management; Ecological countryside management; Advanced informatics; Forest genetics; Fluvimorphology and river restoration; Natural disturbances and fire protection; Protection from pollutants; Protection from hydrological risks; Application of GIS in hydrology.

Specialization in Forestry and Environmental Science (course in English language): Forest policy, Forest hydrology, Informatics advanced course; Carbon balance in forest ecosystems; Forest ecosystems and global change; Integrated watershed management; Geology of mountain areas; Advanced informatics; Sustainable forest management; Forest operations; Insect ecology and biodiversity management; Wildlife conservation management.

Specialization in Planning and management of green areas: Environmental resource valuation; Forest ecosystems; Nursery techniques and quality of ornamental plants; Advanced informatics; Crop plants in green areas; Urban forestry; Fluvimorphology and river restoration; Biological control of pests in green urban areas; Health and wellbeing of ornamental plants; Nutrition of plants; Grasses for sports turfs; Maintenance engineering for green areas; Feeding and management of avifauna.

Employment Prospects

Graduates will be able to carry out tasks of planning, projecting, management, control, coordination and formation in private and public institutions, which operate on different levels in the field of planification and protection of the territory; sustainable management of natural and forestry resources; protection of nature as well as the whole environment, restauration of environment and the management of landscapes and urban green areas.



Food Biotechnology

This course is organized jointly by the **College of Agriculture Science, the College of Veterinary Medicine and the College of Medicine and Surgery.**

Course Objectives

The course provides advanced knowledge and the appropriate formation of professional capacity to be able to carry out complex activities of coordination and management in the sector of biotechnology. In particular the students shall be at the end of their studies able to apply innovative methods utilized in the sector of security and quality control of food as well as in the production of food products.

Subjects

Specialization in Biotechnology for food productions and nutrition: Biology and development of plants; Genomic Analysis; Isolation, characterization and propagation of micro-organisms for food production; Plant biosynthesis; Biodiversity and molecular genetics; Advanced plant biotechnology; Crop Eco-physiology; Food biotechnology; Microbiology of food; Molecular aspects in stressed plants; Biotechnology of fruits; Biotechnology for protection of plant products from arthropods; Biotechnology for protection of plant products from diseases; Biochemistry techniques and applied bio molecular techniques for the analysis of proteomics.

Specialization in Biotechnology for the security of food and food hygiene: Techniques of animal production and animal wellbeing; Residues, contaminants and biomarker in food security; Food hygiene, microbiology and food technology; Epidemiology and control of food zoonosis; Epidemiology of reverse zoonosis infectious to food and laboratories; Parasitic reverse zoonosis; Analytic toxicology and forensics in food safety; Phylogenetic reconstruction of organisms for food production; Laboratory of applied biotechnology; Anatomic – pathological methods and pathologic toxicology; Nutrition and gastro-intestinal pathology; Animal behaviour and nutritional illnesses; Biochemistry techniques and applied biomolecular techniques for the analysis of proteomics.

Employment Prospects

Graduates will be highly qualified for activities in the sector of food industry and in all kind of enterprises related to the production, transformation and conservation of food products, retailers, in private and public organizations for planning, analysis, control, certification and research for food safety and valorisation of food products, organizations for education, in laboratories and as free professionals.

Local Development

This course is organized jointly by the **College of Agriculture Science, College of Education, College of Political Sciences and College of Statistical Sciences**

Course Objectives

The master degree course includes activities devoted to the acquisition of advanced knowledge in the fields of political, economic, territorial and social organizations and their transformations.

Special attention will be given to the study of local development processes, to statistics for the measurement of local development, and to project planning and group dynamics.

Employment Prospects

The course prepares professionals in local development and, more in general, in development co-operation, especially the decentralized one.

The course aims at fostering knowledge in the promotion of community development with specific attention to context analysis and feasibility studies, activities under the project cycle, and elaboration and evaluation of policies and sector programs.

Marine Biology

This course is organized jointly by the **College of Agriculture Science, the College of Veterinary Medicine and the College of Mathematical, Physical and Natural Science.**

Course Objectives

The course is focusing on the formation of experts with an advanced and operative preparation in the field of biodiversity of marine ecosystems with the capacity to applicate this knowledge for the safeguard of the biological heritage and the natural stock, for the responsible utilization of of marine ressources and the development of methods and technology for breeding of species and their commercial value.

Subjects

Aspects of the life history of marine organisms; Biodiversity and adaptive strategies of marine animal organisms; Population ecology and genetics; Ecology of the community; Biodiversity and adaptive strategies of marine photosynthetic organisms; Law; Production, transformation, nutritional and organoleptic quality of fish products; Production, control and quality of fish products; Control, hygienic and sanitary quality of fish products; Marine microbiology; Marine Eco-toxicology; General and special pathology of domesticated

aquatic organisms; Behavioural ecology of marine organisms; Economics and marine law; Pathology of marine species of commercial value; Technology of transformation and valuation of the quality of fish products.

Employment Prospects

Graduates will be able to carry out research activities, activities related to the management of the marine environment or/ and the management of private and public enterprises in the field of aqua-culture.



Science and Technology for the Environment and Territory

This course is organized jointly by the **College of Agriculture Science and the College of Mathematical, Physical and Natural Science**.

Course Objectives

The course provides advanced knowledge and adequate professional capacity to be able to carry out complex tasks of coordination and management of activities the environmental sector. In particular the students will receive the capacity to guarantee, applying innovative methods, the security, quality and sanity of different compartments of the anthropogenic environment.

Subjects

Environmental chemistry II; Ecology; Physiology and genetics for the environment; Applied geophysics; Herbal purification; Advanced informatics; Territorial planning and economics; Environmental legislation

Specialization in Analysis and control of the environment and territory: Analytical methods; Restoration of the territory; Environmental mineralogy; Molecular ecology; Molecular methods for environmental research; Chemical methods for

environmental sciences 1 and 2; Applied physiology; Applied genetics; Hydrology

Specialization in Restoration and valorisation of the environment and territory: Interactions between vegetation and atmosphere; Soil protection; Sustainability and environmental impacts of animal feeding; Hydraulics; Interactions between plants, pathogens and environment

Employment Prospects

Graduates will be qualified to carry out activities of planning, management, control, coordination and education related to problems of analysis, management, conservation, valorisation and reconstruction of the quality of environmental resources of the territory with the presence of anthropogenic impacts.



Viticulture, Enology and Wine Marketing

This course is organized jointly by the College of Agriculture Sciences - University of Padova and the College of Agriculture Sciences - University of Udine

Course Objectives

The degree course aims to train graduates to acquire a sound and thorough preparation for higher education in the fields of applied economics in the wine sector, as well as in viticulture, enology and quality control related to the production of grapes, its processing and marketing of the finished product. The training, in fact, plans to expand and develop high level knowledge and skills to be applied in the real world of work.

Employment Prospects

The student graduate in VEM will find space in the wine-producing and enological sectors at higher positions, with the role of manager or advisor. In particular there is a focus on the following activities:

- Management and consultancy, in small-medium sized wine-producing companies, in the production and processing of

grapes and other derivatives, of refinement, bottling, storage and marketing of wines and other related products;

- Analysis, testing, certification and promotion of wine products in both private and public corporations;

- Cooperation in the implementation and management of projects in basic and applied research in the areas of wine production and in the wine processing, wine-making plant and equipment, as well as in effective marketing management.



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