

COURSE OF STUDY Science for the Enhancement of Gastronomic Heritage
ACADEMIC YEAR 2023-2024
ACADEMIC SUBJECT Plants and mushrooms In gastronomic ecosystems (abbr. **PHITO**)

General information	
Year of the course	First year
Academic calendar (starting and ending date)	I SEMESTER (9 October 2023 - 26 June 2024)
Credits (CFU/ETCS):	6 ECTS
SSD	BIO/03 – ENVIRONMENTAL AND APPLIED BOTANY
Language	ITALIAN
Mode of attendance	Recommended Attendance

Professor/ Lecturer	
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Virtual room	Microsoft Teams Code: w57re8n
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Use email messages to establish appointments

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	32	28	90
CFU/ETCS			
6	4	2	

Learning Objectives	The course aims to provide students with basic theoretical knowledge related to plant biology and mycology. In detail, various aspects related to the systematics and taxonomy of plants and mushrooms, the materials and methods of study, and the basic characteristics for identifying the most important families and species of prevalent gastronomic interest will be explored.
Course prerequisites	There are no specific prerequisites other than those required for admission to the degree course.

Teaching strategies	Blended learning: The topics of the course will be treated with the help of Power Point presentations, with the support of movies.
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Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Basic knowledge of the morphology of higher plants and edible fungi, identify the main species and varieties typical of Mediterranean cuisine. He/she should also know the main exotic species commonly used in Italian gastronomy. Finally, the student should know the spontaneous species of the Italian flora most commonly used in popular culinary tradition.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Ability to recognize the diagnostic characters of different families of plants and mushrooms of gastronomic interest; to identify the edible parts of plants and mushrooms; to know and identify wild plants and mushrooms commonly used in traditional Mediterranean cuisine.
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ The student is able to recognize plant and fungal species, and to use their edible parts in gastronomy. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to communicate effectively, orally and in writing, the knowledge acquired, including with the help of modern communicative systems, Italian and a European Union language other than one's own, usually English. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to use the methodological tools and knowledge necessary to successfully approach the studies planned in the relevant Master's Degrees. The student is able to identify the interrelationships between the topics and concepts learned, manifesting ample ability to apply and transfer to specific case studies.
Syllabus	
Content knowledge	<p><u>Lectures (32 hours):</u> Plant systematics and its history. General concepts inherent in Systematics and Taxonomy. Classification of the Kingdom Fungi and the Kingdom Plants. Taxonomic units. Concepts of species and significance of intraspecific taxa. Botanical nomenclature. Major plant classification systems. Artificial systems and natural systems.</p> <p>Concept of flora and vegetation and their types. Areal. Relationship between climate and flora: biological forms. Native and alien flora. Plants through time: plants and fungi and human nutrition.</p> <p>Substances in plants that perform defense functions in humans; major nutrient components in plants and mushrooms.</p> <p>Biodiversity and taxonomy: Thallophytes, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms. Most common edible fungi; carbohydrate, protein, lipid, mineral and vitamin contents in macromycetes of food interest. Green, brown and red algae. Algae as a food and medicinal source. Main food components of algae. Cereals: wheat, corn, barley, oats, rye. Cereals and mycotoxins. Non-grain cereals: buckwheat, amaranth. Nutritional contents in cereals. Legumes. Carob, chickpea, lentil, bean, pea, fava bean, peanut, soybean. Nutritional contents in legumes. Feculiferous plants: potato, yam, Jerusalem artichoke. Sugar plants: sugarcane, beet, sugar sorghum, palms and sugar maple. Oil plants. Olive, canola, sunflower, sesame, safflower, oil palm. Drug-producing plants. Nerve plants: coffee, tea, cocoa, cola, guarana, maté. Aroma and spice producing plants: Aromatic plants: onion, garlic, leek, shallot, celery, parsley, mint, basil, sage, oregano, thyme Spice plants: vanilla, cloves, cassia, chili pepper, mustard, cinnamon, nutmeg. Leaves, fruits and seeds of different food species: morphology and anatomy, food uses and contents. Leaves: leaf chard, spinach. lettuce, cabbage, fennel. Real fleshy fruits and dried fruits, multiple fruits, false fruits. Plants and fungi producing food additives: plants producing gums and</p>

	<p>phycocolloids, dyes; and sweeteners. Plants used as food supplements. Lichens of food interest. Pteridophytes of food interest.</p> <p><u>Practical exercises (28 hours)</u>: Classroom and field exercises (technical visits) on the use of keys for identification and recognition of plant and fungal species of gastronomic interest.</p>
Texts and readings	<p>BARONI E., 1969 – Guida Botanica d'Italia. Cappelli MACOLINO S., 2020 – Botanica Agraria. Cleup PASQUA G., ABBATE G., FORNI C. (eds.), 2015 – Botanica generale e diversità vegetale. Piccin RINALLO C., 2005 – Botanica delle Piante Alimentari. Piccin VENTURELLA G., GARGANO M.L. – Funghi. Alimentazione e nutraceutica. libreriauniversitaria.it</p>
Notes, additional materials	Different editions of the reference texts above can also be used.
Repository	Teaching materials will be available on the Teams class: w57re8n

Assessment	
Assessment methods	<p>For students enrolled in the year in which the course is taught, there is a non-compulsory exemption test. The exoneration, which takes place on the dates published in the diary of intermediate assessment tests, consists of a written test in which the student will have two hours to answer multiple-choice and open-ended questions on topics covered in the first half of the course. The outcome of this test contributes to the evaluation of the final oral examination.</p> <p>Specifically, the exoneration test, consists of a test with 25 multiple-choice and 5 open-ended questions: 1 point for each correct answer, 0 points for each wrong or no answer. The student, who correctly answers at least 18 out of 30 questions passes the test and is "eligible."</p> <p>Female students and students who are not interested in taking the exemption test will take the final oral examination on the entire syllabus as stipulated in the Didactic Regulations of the Course of Study.</p>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ competence in the use of the student's specialized vocabulary and expository skills. ○ basic knowledge related to morphological characteristics of plant and cryptogamic species and essential diagnostic characters to identify the most important plant and fungal families and species of gastronomic interest. • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ knows the essential morpho-physiological characteristics of various plant groups of food interest and is able to identify plant and fungal species of gastronomic interest through the use of analytical keys. • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ is able to assess his or her own potential and limitations and can strive for improvement. ○ is able to evaluate the implications and results of botanical studies in support of gastronomy-related activities. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ is able to orally expound the results of the studies of Botany applied to gastronomy even to an audience that is not an expert or with practical experience but with reduced scientific basis. • <i>Communication skills</i> <ul style="list-style-type: none"> ○ is able to keep up to date, through consultation of scientific publications

	<p>relevant to the field of botany; will acquire the ability to understand the disciplines of the curriculum that employ botany as a cognitive basis; will be able to take first-level master's degrees, in-depth courses, and specialized seminars in the field of Applied Botany in Gastronomy.</p> <ul style="list-style-type: none"> • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ assessment of progress against baseline levels
Final exam and grading criteria	<p>The proficiency exam, for the course <i>Plants and Mushrooms in Gastronomic Ecosystems</i> (abbr. <i>PHITO</i>), consists of an oral test on the topics developed during the theoretical-practical lecture hours. Only the successful completion of the oral test will result in the final assessment of the exam.</p> <p>For students who were successful in the written exemption test, the subject of the oral test will be only the topics developed in the period following the test itself. In this case, the evaluation of the profit examination shall be expressed as the average of the grade given in the exemption and the grade given in the oral test.</p> <p>The profit examination of female students of foreign students may be conducted in English.</p>
Further information	
	<p>The exemption test is valid until the close of the last examination session of the that academic year, is not mandatory and failure to pass it does not affect the conduct of the final examination.</p>