

Syllabus

Course description

Course title	Elements of chemistry and biochemistry applied to food and wine sciences
Course code	40403
Scientific sector	AGR/13
Degree	Bachelor in Enogastronomy in Mountain Areas
Semester	1
Year	2024/2025
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	24
Total office hours	18
Attendance	Highly recommended
Course page	/
Lecturer	Luigimaria Borruso, BZ K1.05, luigimaria.borruso@unibz.it, +39 0471 017610

Scientific sector of the lecturer	AGR/13
Teaching language	English
Office hours	Monday to Friday, upon appointment to be agreed through email
Specific educational objectives	The course contents are crucial for acquiring the scientific background and professional skills regarding the basis of chemistry and biochemistry applied to food and wine sciences.
List of topics covered	<p>Elements of chemistry</p> <ul style="list-style-type: none"> • Introduction Elements of chemistry and biochemistry applied to food and wine sciences Overview of soil ecosystems. • Measurements and calculations • Matter and energy • Atomic theory and the atom • Chemical bonding • Elements and ions • Nomenclature • Chemical reactions • Chemical composition • Gases

	<ul style="list-style-type: none"> • Heavy metals residuals in food • Chemistry of food packaging • Carbohydrates and lipids • Proteins and enzyme • Vitamins and minerals • Introduction to cellular biology and biochemistry • Cellular respiration • Aerobic harvesting of energy • Stages of cellular respiration • Anaerobic Respiration • Biochemistry of food spoliage • Colour chemistry • Flavour chemistry
Teaching format	<p>The class comprises lectures during which the professor presents the topics. Excursions and laboratory activities are also foreseen. The assessment of the student preparation is through an oral exam. The exam includes questions to verify the understanding of the course topics. In addition, questions on possible practical implications of the topics taught in the course will be evaluated.</p>
Assessment language	<p>Oral</p>
Evaluation criteria and criteria for awarding marks	<p>Ability to present clearly the topics studied within the course using appropriate technical terminology. In addition, the capability to establish relationships between different topics will be evaluated.</p>
Required and/or suggesting reading materia	<p>Lecture notes are strongly recommended as a study material.</p> <p>Suggested books:</p> <ul style="list-style-type: none"> - Inorganic Chemistry, <i>Gary Miessler</i> - Introduction to Food Chemistry, <i>Vassilis Kontogiorgos</i> - Lehninger Principles of Biochemistry, <i>David L. Nelson Michael M. Cox</i>