

## Syllabus

### Course description

<b>Course title</b>	Vineyard management and wine production in mountain areas
<b>Course code</b>	44614
<b>Course credits</b>	10 ECTS
<b>Degree</b>	Viticulture, Enology and Wine Marketing
<b>Semester</b>	I
<b>Year</b>	II
<b>Academic year</b>	2021/2022
<b>Modular</b>	Yes

<b>Total lecturing hours</b>	16 + 24 + 16
<b>Total lab and exercise hours</b>	12 + 12 + 12
<b>Attendance</b>	strongly recommended
<b>Course page</b>	<a href="https://www.unibz.it/en/faculties/sciencetechnology/master-in-viticulture-enology-and-wine-marketing/">https://www.unibz.it/en/faculties/sciencetechnology/master-in-viticulture-enology-and-wine-marketing/</a>

<b>Course title</b>	Vineyard management and wine production in mountain areas
<b>Module title</b>	<b>Vineyard management in mountain areas</b>
<b>Course code</b>	44614A
<b>Scientific sector</b>	AGR/03
<b>Degree</b>	Viticulture, Enology and Wine Marketing
<b>Semester</b>	I
<b>Year</b>	II
<b>Academic year</b>	2021/2022
<b>Credits</b>	3 ECTS
<b>Total lecturing hours</b>	Frontal/regular lectures: 16 h;
<b>Total exercise hours</b>	12 hours;

<b>Prerequisites</b>	Students should have at least a basic knowledge of arboriculture and general viticulture.
<b>Course page</b>	-
<b>Lecturer</b>	Carlo Andreotti, <a href="mailto:carlo.andreotti@unibz.it">carlo.andreotti@unibz.it</a> ; web page: <a href="https://www.unibz.it/en/faculties/sciencetechnology/academic-staff/person/27175-carlo-andreotti">https://www.unibz.it/en/faculties/sciencetechnology/academic-staff/person/27175-carlo-andreotti</a>
<b>Teaching language</b>	English
<b>Office hours</b>	Upon arrangement by email
<b>Teaching assistant</b>	Haas Florian
<b>Targeted learning outcomes:</b>	The course will provide students with scientific and technical knowledge on the main aspects related to the management of vineyards located in mountain areas. Students will understand and critically consider the main factors involved in mountain environment and their consequences on grapevine physiology and cultural management. Finally, students will learn how the exploitation of the mountain conditions can lead to an enhancement of the final quality of grapes, while maintaining yield level and overall sustainability.
<b>Content:</b>	Course contents are as follows:

	<ul style="list-style-type: none"> <li>- The altitude effect on vineyard microclimatic conditions: role of temperature, daily temperature excursion, light intensity and quality, exposition.</li> <li>- The effect of altitude on grape quality.</li> <li>- Cultural management of mountain vineyards: site preparation in steep slope conditions (contour farming, up-down the slope, terracing systems), means against soil erosion, canopy management (grapevine training systems for steep slopes conditions and in relation with vineyard exposition).</li> <li>- Protection against adverse meteorological conditions (late frost, early frost, too high radiation, sunburn damages).</li> <li>- Climate change and mountain viticulture (DOC modification, adaptation to warmer conditions, control of ripening dynamic of grapes, exploitation of new areas at higher altitudes).</li> <li>- Selection of new cultivars potentially suitable for mountain environment.</li> </ul>
<b>Teaching format</b>	Power point slides
<b>Exam form:</b>	Individual project work and oral exam.
<b>Literature:</b>	There are no specific textbooks on the course topics. The lecturer will provide students with the pdf of the lectures and with selected papers from the international literature on the subject.

<b>Course title</b>	Vineyard management and wine production in mountain areas
<b>Module title</b>	<b>Vineyard Mechanization in Mountain Areas</b>
<b>Module code</b>	44614B
<b>Scientific sector</b>	AGR/09
<b>Degree</b>	Viticulture, Enology and Wine Marketing
<b>Semester</b>	I
<b>Year</b>	II
<b>Academic year</b>	2021/2022
<b>Credits</b>	4 ECTS

<b>Total lecturing hours</b>	Frontal/regular lectures: 24 h;
<b>Total lab and exercise hours</b>	Lectures: 12 hours;
<b>Total exercise hours</b>	Exercises: 12 hours (visit to companies related to the course and/or other practical activities)
<b>Attendance</b>	Not compulsory
<b>Prerequisites</b>	Students should have at least a basic knowledge agricultural mechanization.
<b>Course page</b>	-
<b>Lecturer</b>	Liberatori Sandro
<b>Teaching language</b>	English
<b>Office hours</b>	Upon arrangement by email
<b>Targeted learning outcomes:</b>	Provide students with basic knowledge on mechanization in mountain areas, specific knowledge on safety requirements and performances of machines, homologations and use according to environment protection and high quality production, evaluation of innovation and transfer of technologies. Being able to apply standard requirements in the design and evaluation of machines, provide for a proper use of machines, to measure the level of innovation and provide for technology transfer.
<b>Content:</b>	International standards and their application in the field of performances, safety and environment protection related

	to machines, the use of machines for quality production, measurement of the level of innovation of machines, technology transfer.
<b>Teaching format</b>	Regular lectures, web platform, team working and group project, visit of manufacturing plants and farms.
<b>Exam form:</b>	1/3 oral examination, 1/3 group work, 1/3 written examination; 25% skill to properly set a problem, 25% skill to find a solution, 25% level of knowledge of the topics, 25% ability for presentations
<b>Literature:</b>	Course material by the lecturer

<b>Course title</b>	Vineyard management and wine production in mountain areas
<b>Module title</b>	<b>Wine production processes and plants</b>
<b>Module code</b>	44614C
<b>Scientific sector</b>	AGR/15
<b>Degree</b>	Viticulture, Enology and Wine Marketing
<b>Semester</b>	I
<b>Year</b>	II
<b>Academic year</b>	2021/2022
<b>Credits</b>	3 ECTS

<b>Total lecturing hours</b>	Frontal/regular lectures: 16 h;
<b>Total lab and exercise hours</b>	12 hours;
<b>Total exercise hours</b>	Visits of wineries, specialized companies and/or laboratory practice (12 h)
<b>Attendance</b>	Not compulsory, but strongly recommended

<b>Lecturer</b>	Emanuele Boselli, <a href="mailto:emanuele.boselli@unibz.it">emanuele.boselli@unibz.it</a> , +390471017217, <a href="https://www.unibz.it/en/faculties/sciencetechnology/academic-staff/person/37607-emanuele-boselli">https://www.unibz.it/en/faculties/sciencetechnology/academic-staff/person/37607-emanuele-boselli</a>
<b>Scientific sector of the lecturer</b>	AGR/15-Food Science and Technology
<b>Teaching language</b>	English
<b>Office hours</b>	Before and after the lectures and upon appointment from Monday to Friday
<b>Teaching assistant</b>	Poggesi Simone
<b>Office hours</b>	Before and after the lectures and by appointment
<b>List of topics covered</b>	Fundamentals of wine production processes and related plants: red-wine like, white-wine like, rosè wines, carbonic maceration,

	<p>natural sparkling wines, special wines such as raisin wines and fortified wines. Applications of winemaking processes to areas where altitude leads to difficult climatic conditions, and steep slopes (even at lower altitude) limit the possibilities for using the land and lead to an increase in the cost of working. Key features of extreme wines produced with white (Gewürztraminer, Chardonnay, Pinot blanc, Pinot gris, Sauvignon, Müller-Thurgau, Sylvaner, Kerner, Riesling, Veltliner, Moscato) and red (Lagrein, Pinot Noir, Merlot, Cabernet Sauvignon, Cabernet Franc and Moscato rosa) varieties.</p> <p>Techniques to preserve the aroma of extreme wines and to prevent the defects. Practical laboratory experiments and technical visits to specialized external companies.</p>
<b>Teaching format</b>	Frontal lectures combined with distance learning (Power point and blackboard), labs, projects, visit to companies

<b>Learning outcomes</b>	<p>Learning outcomes according to the Dublin Descriptors:</p> <p>Knowledge and understanding</p> <p>(a) adequate knowledge and understanding about the development of projects related to the processing plants and production of extreme wines, (b) provide an adequate knowledge of the approaches needed to obtain <i>wines in mountain areas</i></p> <p>(c) knowledge and understanding of the opportunities and limitation imposed by mountain environment to viticultural practices</p> <p>Applying knowledge and understanding</p> <p>(a) developing the capability of integration of information, both in horizontal way (technological, chemical, biological, and regulatory aspects involved in the winemaking process) and in vertical way (reasonable sequence of processes along the production chain of extreme and mountain wines); (b) capability of carrying out strategies for the introduction of innovative processes in the production of extreme and mountain wines; (c) capability of evaluating the potentiality of innovative technologies; (d) capability of applying the right chemical/instrumental techniques to assess the quality of extreme/mountain wines.</p>
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	<p>(e) application of theoretical knowledge and physiological principles to approach and solve viticultural problems under mountain conditions</p> <p>Making judgements</p> <p>Capability of identifying the information needed to introduce sustainable technological innovations and to ensure and evaluate the quality of extreme and mountain wines.</p> <p>Communication skills</p> <p>capability of clearly and exhaustively communicate notions, ideas, problems and technical solutions to interlocutors, either professional or not, representative of the various and specific competencies in the wine supply chain (enologists, agronomists, engineers, biologists, chemists, nutritionists, administrators) with specific emphasis on extreme and mountain wines.</p> <p>Learning skills</p> <p>To get the learning skills that are necessary to make decisions regarding vineyard management and winery plants in mountain and extreme areas and to obtain wines in those areas with sustainable technologies and with a good level of autonomy.</p>
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<b>Assessment</b>	Team project work: power point presentation of a project work done in groups on a topic related to the course combined with an individual interview
<b>Assessment language</b>	English
<b>Evaluation criteria and criteria for awarding marks</b>	<p>Successful completion of the examination will lead to grades ranging from 18 to 30 with honors (50% project work and 50% individual interview).</p> <ul style="list-style-type: none"> <li>• relevant for individual interview: clarity of answers, mastery of language (also with respect to teaching language), ability to summarize, evaluate, and establish relationships between topics;</li> <li>• relevant for project work: ability to work in a team, creativity, skills in critical thinking, ability to summarize in own words</li> </ul>



<b>Required readings</b>	Key notes provided by the lecturer in the E-learning platform of UNIBZ;
<b>Supplementary readings</b>	Ribéreau-Gayon P., Dubourdieu D., Donèche B., Lonvaud A. – Handbook of Enology – Vol. I and II – free pdf version available in the internet  OIV technical standards and documents <a href="http://www.oiv.int/en/technical-standards-and-documents">http://www.oiv.int/en/technical-standards-and-documents</a>  Cervim website: <a href="http://www.cervim.org/">http://www.cervim.org/</a>