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| Course title | <u>Vineyard management and wine production in mountain areas</u> |
| Module title | Vineyard management in mountain areas |
| Module code | <u>44614</u> |
| Module credits | 10 ECTS |
| Course code | 44614A |
| Scientific sector | AGR/03 |
| Degree | Agricultural and Agro-Environmental Sciences |
| Semester | I |
| Year | II |
| Academic year | 2018/2019 |
| Credits | 3 ECTS |
| Modular | Yes |
| Total lecturing hours | Frontal/regular lectures: 16 h; |
| Total lab and exercise hours | Laboratory exercises: 12 h; Student's personal study time in the module: 45 h |
| Total exercise hours | - |
| Attendance | Not compulsory |
| Prerequisites | Students should have at least a basic knowledge of arboriculture and general viticulture. |
| Course page | - |
| Lecturer | Carlo Andreotti |

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| Teaching language | English |
| Office hours | Upon arrangement by email |
| Targeted learning outcomes: | 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. |
| Content: | <p>Course contents are as follows:</p> <ul style="list-style-type: none"> - The altitude effect on vineyard microclimatic conditions: role of temperature, daily temperature excursion, light intensity and quality, exposition. - The effect of altitude on grape quality. - Cultural management of mountain vineyards: site preparation in steep slope conditions (contour farming, up- down the slope, terracing systems), means against soil erosion (cover crops, tilling, etc.), canopy management (grapevine training systems for steep slopes conditions and in relation with vineyard exposition). - Protection against adverse meteorological conditions (late frost, early frost, too high radiation, sunburn damages). - Sustainable use of water and nutrients inputs in sloped vineyards. - Climate change and mountain viticulture (DOC modification, adaptation to warmer conditions, control of ripening dynamic of grapes, exploitation of new areas at higher altitudes). - Selection of new cultivars potentially suitable for mountain environment. |
| Teaching format | Power point slides |
| Exam form: | Oral exam |
| Literature: | 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. |

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|--------------------------|-----------------------------------------------------------|
| Course title | Vineyard management and wine production in mountain areas |
| Module title | Vineyard Mechanization in Mountain Areas |
| Module code | <u>44614</u> |
| Module credits | <u>10 ECTS</u> |
| Course code | 44614B |
| Scientific sector | AGR/09 |
| Degree | Agricultural and Agro-Environmental Sciences |
| Semester | I |
| Year | II |
| Academic year | 2018/2019 |
| Credits | 4 ECTS |
| Modular | No |

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| Total lecturing hours | Frontal/regular lectures: 16 h; |
| Total lab and exercise hours | Lectures: 24 hours; Student's personal study time in the module: 60 h |
| Total exercise hours | Exercises: 12 hours; |
| Attendance | Not compulsory |
| Prerequisites | Students should have at least a basic knowledge of arboriculture and general viticulture. |
| Course page | - |
| Lecturer | Liberatori, Sandro |
| Teaching language | English |

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| Office hours | Upon arrangement by email |
| Targeted learning outcomes: | 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. |
| Content: | 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. |
| Teaching format | Regular lectures, web platform, team working and group project, visit of manufacturing plants and farms. |
| Exam form: | 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 |
| Literature: | Course material by the lecturer |

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|--------------------------|-----------------------------------------------------------|
| Course title | Vineyard management and wine production in mountain areas |
| Module title | Wine production processes and plants |
| Module code | 44614 |
| Module credits | 10 ECTS |
| Course code | 44614C |
| Scientific sector | AGR/15 |
| Degree | Agricultural and Agro-Environmental Sciences |
| Semester | I |
| Year | II |
| Academic year | 2018/2019 |
| Credits | 3 ECTS |
| Modular | No |

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| Total lecturing hours | Frontal/regular lectures: 16 h; |
| Total lab and exercise hours | Lectures: 24 hours; |
| Total exercise hours | Visits of wineries, specialized companies and/or laboratory practice 12 h; |
| Attendance | Not compulsory |
| Prerequisites | - |
| Course page | - |
| Lecturer | Boselli Emanuele |
| Teaching language | English |
| Office hours | Upon arrangement by email |

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| Targeted learning outcomes: | The students can manage adequately the different wine production processes and plants with emphasis on <i>extreme wines</i> |
| Content: | <p>Fundamentals of wine production processes and related plants: red-wine like, white-wine like, rosè wines, carbonic maceration, 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 <i>extreme wines</i> 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>Production processes of other <i>extreme wines</i> of the world (Beaujolais, Port wine, Cinque Terre, Eiswein/ice wine, Pecorino and <i>spumante</i> wines).</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 and wineries.</p> |
| Teaching format | Power point and blackboard |
| Exam form: | Team project work: power point presentation done in groups on a topic related to the course combined with an individual interview |
| Literature: | <p>Key notes provided by the lecturer in the E – learning platform of unibz</p> <p>Ribéreau-Gayon P., Dubourdieu D., Donèche B., Lonvaud A. – Handbook of Enology – Vol. I and II – free pdf version available in internet</p> <p>OIV technical standards and documents http://www.oiv.int/en/technical-standards-and-documents</p> <p>Cervim website: http://www.cervim.org/</p> |