# Syllabus

## *Course Description*

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| **Course Title** | Innovation and authenticity for winery products |
| **Course Code** | 44764 |
| **Course Title Additional** | |
| **Scientific-Disciplinary Sector** | AGRI-07/A |
| **Language** | English |
| **Degree Course** | Master in Food Sciences for Innovation and Authenticity |
| **Other Degree Courses (Loaned)** | |
| **Lecturers** | Prof. Emanuele Boselli,<br>Emanuele.Boselli@unibz.it<br>https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37607<br>Dr. Edoardo Longo,<br>Edoardo.Longo@unibz.it<br>https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/35783 |
| **Teaching Assistant** | |
| **Semester** | First semester |
| **Course Year/s** | 2 |
| **CP** | 6 |
| **Teaching Hours** | 36 |
| **Lab Hours** | 24 |
| **Individual Study Hours** | 90 |
| **Planned Office Hours** | 18 |
| **Contents Summary** | The course addresses selected advanced topics in oenology, focusing on innovation and authenticity of winery products. Monographic lectures cover must and wine correction strategies, innovative oenological additives and processing aids (including exogenous tannins and enzymes), advanced winemaking technologies, alternative ageing systems, stabilization strategies, and sustainable winery practices. The course also examines the |

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| | production technologies and quality characteristics of special wines, including fortified, aromatized, raisin and oxidative wines (e.g., Marsala, Sherry, Madeira, Port, Tokaji, Sauternes, Vernaccia di Oristano and/or Eiswein), together with the principles of grape distillation and the production of grape spirits, distilled beverages, liqueurs, vinegar and balsamic vinegar. Finally, analytical approaches for assessing wine authenticity, geographical origin, traceability and fraud prevention are presented through recent scientific advances and case studies. |
| **Course Topics** | The course addresses selected advanced topics in oenology, focusing on innovation and authenticity of winery products. Monographic lectures cover must and wine correction strategies, innovative oenological additives and processing aids (including exogenous tannins and enzymes), advanced winemaking technologies, alternative ageing systems, stabilization strategies, and sustainable winery practices. The course also examines the production technologies and quality characteristics of special wines, including fortified, aromatized, raisin and oxidative wines (e.g., Marsala, Sherry, Madeira, Port, Tokaji, Sauternes, Vernaccia di Oristano and/or Eiswein), together with the principles of grape distillation and the production of grape spirits, distilled beverages, liqueurs, vinegar and balsamic vinegar. Practical sessions focus on the anlytical characterization of key chemical components and on interpreting their relationships with wine quality. Finally, analytical approaches for assessing wine authenticity, geographical origin, traceability and fraud prevention are presented through recent scientific advances and case studies. |
| **Keywords** | special wines<br>spirit drinks<br>vinegars<br>novel additives and techniques in enology<br>analytical characterization |
| **Recommended Prerequisites** | A basic knowledge of chemistry and enology is required. |
| **Propaedeutic Courses** | - |
| **Teaching Format** | frontal lectures, lab exercises and/or technical visits or seminars by professionals in the field |
| **Mandatory Attendance** | No |
| **Specific Educational** | Knowledge and understanding: |

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| **Objectives and Learning Outcomes** | Deep understanding of the technological, microbiological, biochemical, chemical, and physical principles underlying food transformation processes and responsible for food product degradation, ensuring their stability and prolonging their shelf life.<br>Knowledge of analytical methods for determining the authenticity, functionality, and microbiological safety of food products, as well as the related methodological tools for risk assessment.<br>Understanding of the managerial and organizational dynamics of agri-food chains.<br>These knowledge areas will be developed through an educational program that integrates theoretical teaching activities with classroom tutorials, including examples, practical applications, individual and group work, and assessments aimed at encouraging active participation and independent solution development.<br><br>Ability to apply knowledge and understanding:<br>Ability to manage the technological, microbiological, biochemical, chemical, and physical processes that drive food transformation and the main issues related to the stability and shelf life of food products.<br>Ability to select and manage operations related to the traceability, authenticity, and microbiological safety of ingredients, semi-finished products, and food products, including quality assurance systems and product and process certification.<br>Ability to solve problems related to the organization of production, logistics, and management of agri-food chains.<br>Ability to plan and develop analytical techniques, innovative products, and processes using a multidisciplinary approach, with particular attention to local food productions.<br><br>Making judgements:<br>At the end of the course, graduates will be able to analyse the main issues affecting food production systems. They will be able to identify corrective solutions to resolve any non-conformities, optimise and innovate transformation processes, and improve food quality, guaranteeing authenticity.<br>Independent judgement is developed through a training programme designed to stimulate critical analysis in students. This includes the use of case studies, simulations using spreadsheets and videos, the reading and critical discussion of scientific articles, |

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| | as well as specialist seminars held by experts in the food sector.<br><br>Communication skills:<br>Use of the English language, both written and spoken, at a B2 level, with a command of technical and scientific vocabulary related to food science.<br>The degree course provides graduates with the cognitive skills, logical tools and familiarity with new information technologies necessary to ensure continuous updating of knowledge, both in their specific professional field and in the field of scientific research. |
| **Specific Educational Objectives and Learning Outcomes (additional info.)** | |
| **Assessment** | The examination consists of a written test. It includes questions designed to assess students' knowledge and understanding of the topics covered, as well as their ability to apply the acquired competencies to practical cases. The test comprises both multiple-choice and an open-ended question. |
| **Evaluation Criteria** | Passing grades range from 18 to 30, with 30 cum laude awarded for outstanding performance in the examination. |
| **Required Readings** | key note lectures and scientific papers provided by the lecturer and available in the E-learning platform |
| **Supplementary Readings** | Ribéreau-Gayon P., Dubourdieu D., Donèche B., Lonvaud A. – Handbook of Enology – Vol. I and II – free pdf version available in the internet<br><br>OIV standards and technical documents http://www.oiv.int/en/technical-standards-and-documents<br><br>Introduction to wine laboratory practices and procedures, JL Jacobson, Springer |
| **Further Information** | |
| **Sustainable Development Goals (SDGs)** | Quality education, Decent work and economic growth, Partnerships fot the goals, Responsible consumption and production, Industry, innovation and infrastructure |