**DESCRIPTION OF A STUDY COURSE – SYLLABUS**

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| **Title of a course** | **Grapevine physiology and ecology** | | | | |
| **Study programme** | **Specialist Professional Study of Winemaking** | | | | |
| **Status of a course** | Obligatory | | | | |
| **Year of study** | 1 | **Semester** | W | **ECTS credits** | 7 |
| **Goals of a course** | | | | | |
| Introducing students to the basic postulates of modern viticulture production with an emphasis on the physiology of grapevine and the ecological conditions that influence the growth and development of vines. | | | | | |
| **Conditions for enrolling course** | | | | | |
| No conditions | | | | | |
| **Learning outcomes on a level of a study programme which includes course** | | | | | |
| Outcome 1: Assess the impact of physiological processes, ampelotechnical and meliorative treatments on the nature and quality of grapes.  Outcome 2: Evaluate the impact of the *terroir*, technological maturity and harvesting technology to achieve the targeted quality of grapes and wine.  Outcome 7: Choose a specific production technology of autochthonous wine in order to preserve the variety specificities.  Outcome 8: Substantiate the influence of significant factors on the processes and concentration of the most significant wine components.  Outcome 9: Evaluate and determine the origin of the aromatic constituents and types of wine aroma. | | | | | |
| **Expected learning outcomes on a level of a course** | | | | | |
| 1. Interpret the importance and role of factors affecting physiological processes in grapevine such as light, temperature, water availability, nutrient availability, and describe the primary physiological processes (photosynthesis, respiration, transpiration, translocation, and distribution of assimilates within vine). 2. Determine and successfully maintain the physiological efficiency of vineyards and the balance between vegetative growth and vine fertility. 3. Assess the impact of soil characteristics such as geological origin, texture, structure, drainage and water availability, depth, nutrient presence, pH value, colour and proportion of organic matter on the growth and development of grapevine and grape ripening potential. 4. Interpret the importance of climatic factors affecting the growth and development of grapevine, and calculate the climatic indices used in viticulture. 5. Choose a suitable grapevine growing location and describe topographic influences on the growth and development of the grapevine such as sunlight exposure, exposure, inclination, wind exposure, frost protection, altitude, latitude, proximity to large bodies of water. | | | | | |
| **Content of a course** | | | | | |
| Primary physiological processes in grapevine: photosynthesis, respiration, transpiration, translocation, and distribution of assimilates within vine. Factors that influence physiological processes in grapevine: light, temperature, water availability, nutrient availability. Physiological efficiency of vineyards. Determination and maintenance of physiological efficiency of vineyards. Balance between vegetative growth and vine fertility. Soil characteristics that influence the growth and development of grapevine: geological origin, texture, structure, drainage and water availability, depth, flora and fauna, nutrient presence, pH, colour and organic matter proportion. Climatic factors that affect the growth and development of grapevine: temperature, sunlight, water, humidity and wind. Climate indices in viticulture. Topographic influences on the growth and development of grapevine: sunlight exposure, exposure, inclination, wind exposure, frost protection, altitude, latitude, proximity to large bodies of water. Position as a set of natural factors that influence the growth and development of grapevine and the quality of grapes. The concept of terroir. | | | | | |
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