**DESCRIPTION OF A STUDY COURSE – SYLLABUS**

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| **Title of a course** | **Biometrics in viticulture and winemaking** | | | | |
| **Study programme** | **Specialist Professional Study of Winemaking** | | | | |
| **Status of a course** | Obligatory | | | | |
| **Year of study** | 1 | **Semester** | W | **ECTS credits** | 5 |
| **Goals of a course** | | | | | |
| Introduce students to the design and execution of experiments, plans and schemes of experiments (completely random layout, random block layout, Latin square, Latin rectangle), multifactorial experiments (two-factorial and three-factorial) experiments with split plots (Split-plot, Split-block and Split-split-plot). Present experiments repeated in time and space, define treatments, parameters, patterns and types of data, populations, frequency distributions, benchmarks that describe distribution. Introduce students to probability distribution and some more important theoretical distributions, by estimating population parameters over sample values, zero hypothesis and by testing the null hypothesis. Conduct variability analysis (F-distribution, F-test), variance analysis (ANOVA), regression and correlation, and graph data, standard deviation, and interpret analysis results data | | | | | |
| **Conditions for enrolling course** | | | | | |
| No conditions | | | | | |
| **Learning outcomes on a level of a study programme which includes course** | | | | | |
| Outcome: Analyze a group of factors that affect the quality of grapes and wine. Describe physiological processes throughout grape ripening, the impact of ampelo-technical interventions, nutrition / fertilization and drought / irrigation on nature and quality grapes (sugar, acids, pH, phenol and aromatic components) and use these measures in practical production | | | | | |
| **Expected learning outcomes on a level of a course** | | | | | |
| 1. Define experiments, treatments, parameters, patterns and types of data, populations, frequency distributions, and measures that describe the distribution. 2. Assess population parameters on the basis of sample values, null hypothesis, and test the null hypothesis. 3. Conduct variability analysis (F–distribution, F-test), variance analysis (ANOVA), regression and correlation 4. Graphically display data, standard deviation and interpret data analysis results | | | | | |
| **Content of a course** | | | | | |
| Experiment planning and execution, experiment plans and schemes (completely random layout, random block layout, Latin square, Latin rectangle). Multifactorial experiments (two-factorial and three-factorial) experiments with split plots (Split-plot, Split-block and Split-split-plot). Experiments repeated in time and space. Defining treatments, parameters, patterns and data types. Populations, frequency distributions. Metrics describing distribution. Probability distribution and some more important theoretical distributions. Estimation of population parameters on the basis of sample values. Null hypothesis and null hypothesis testing. Variability analysis (F-distribution, F-test), variance analysis (ANOVA). Regression and correlation. Graphic presentation of data analysis’ results. | | | | | |
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