

<b>Study Programme:</b> Biotechnology
<b>Course Unit Title:</b> Technology of Alcoholic Spirits
<b>Course Unit Code:</b> PBO302
<b>Name of Lecturer(s):</b> assistant professor Uroš Miljić
<b>Type and Level of Studies:</b> Undergraduate Academic Degree
<b>Course Status (compulsory/elective):</b> Compulsory
<b>Semester (winter/summer):</b> Summer
<b>Language of instruction:</b> English
<b>Mode of course unit delivery (face-to-face/distance learning):</b> face-to-face
<b>Number of ECTS Allocated:</b> 5
<b>Prerequisites:</b> None
<p><b>Course Aims:</b></p> <p>Training and acquisition of knowledge necessary for professional and successful guidance of the production of strong alcoholic beverages from various agricultural raw materials. Special attention will be given to grapes and fruits, as traditional raw materials for production of distilled beverages in this part of the world. The course will ensure gaining of scientific and academic skills and knowledge that will include different aspects of industrial microbiology, enzymology and technological operations.</p>
<p><b>Learning Outcomes:</b></p> <p>Knowledge and understanding of the production process of different types of alcoholic spirits.</p> <p>Ability to independently manage and create the process of production of distilled beverages from different raw materials, using modern techniques for raw materials treatment, fermentation and distillation. Ability to independently solve practical problems and control the process of production. Appropriate ageing and finalization of alcoholic spirits. Knowledge of the sensory characteristics of different groups of distilled beverages.</p>
<p><b>Syllabus:</b></p> <p><i>Theory</i></p> <p>Necessary legal and technical conditions for the production of strong alcoholic beverages. Primary processing of grapes and fruits. The most important aspects of treatments and alcoholic fermentation of fruit pomace. Types of distillation devices, specificity of distillation in the production of alcoholic spirits. Chemical composition of the distillates. Ageing of distilled beverages. Failures and defects of distilled beverages and the possibilities for corrections and quality improvement. Specifics in the production of different alcoholic spirits (whiskey, vodka, gin, liqueurs etc.). Basics of sensory evaluation of alcoholic spirits.</p> <p><i>Practice</i></p> <p>Laboratory analyses of physical and chemical parameters of distilled beverages. Production of grape and fruits spirits in laboratory conditions.</p>
<p><b>Required Reading:</b></p> <ol style="list-style-type: none"> <li>1. N. Nikićević, R. Paunović: Technology of Strong Alcoholic Drinks, Faculty of Agriculture, University of Belgrade, Belgrade, 2013.</li> <li>2. J. Pischl: Distilling fruit brandy. Schiffer, Atglen, 2011.</li> <li>3. A.J. Buglass. Handbook of Alcoholic Beverages. Technical, Analytical and Nutritional Aspects. Wiley, 2011.</li> </ol>

<b>Weekly Contact Hours: 5</b>		<b>Lectures: 3</b>		<b>Practical work: 2</b>	
<b>Teaching Methods:</b>					
Lectures and students group work					
<b>Knowledge Assessment (maximum of 100 points): 100</b>					
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points		
Active class participation	10	written exam			
Practical work	20	oral exam	40		
Preliminary exam(s)	30	.....			
Seminar(s)					
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.					