

<b>Subject name</b>	<b>Malting and Brewing Technology</b>	
<b>Subject code</b>	<b>T.KTF.MABTE.SM.TTZTF</b>	
<b>Department</b>	<b>Department of Fermentation Technology and Technical Microbiology</b>	
<b>Faculty</b>	<b>Faculty of Food Technology</b>	
<b>Subject supervisor/Lecturer</b>	<b>Aleksander Poreda Ph.D.</b>	
<b>General information</b>	<b>Teaching period</b>	<b>Summer semester</b>
	<b>ECTS credit</b>	
	<b>Lectures total</b>	<b>15</b>
	<b>Lab classes</b>	<b>15</b>
<b>Objective and general description</b>	The contents of the course covers the main issues of beer production. This is accomplished through a combination of lectures, and practical work. The whole production chain is covered during the lectures (malting process, brewhouse operations, fermentation, maturation and bottling) and also during the laboratory practical, where additionally analysis of brewing yeast is performed.	
<b>Lectures</b> <b>5 x 3 hours</b>	<ol style="list-style-type: none"> <li>1. Primary raw materials such as barley, water and hops, and specific knowledge regarding growth and strain improvement of these commodities.</li> <li>2. In-depth knowledge of the technological features of the malting process.</li> <li>3. Brewhouse operations and wort parameters</li> <li>4. Fermentation and maturation of beer</li> <li>5. Stabilization techniques and product characteristics.</li> </ol>	
<b>Lab classes</b> <b>3 x 5 hours</b>	<ol style="list-style-type: none"> <li>1. Brewing yeast analysis (vitality, dry matter, fermentation activity).</li> <li>2. Barley and malt analysis – dry matter, vitality, sieving test, mashing procedure, fermentation of wort and the biochemical changes of wort during fermentation.</li> <li>3. Beer: physico-chemical parameters, sensory analysis of beer.</li> </ol>	
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Analytica EBC, 1987.</li> <li>2. Malting and brewing technology, Wolfgang Kunze, 1994.</li> <li>3. A Handbook of basic brewing calculations, Stephen R. Holle, MBAA, 2003</li> <li>4. Practical Handbook for the Specialty Brewer – Raw Materials and Brewhouse Operations, Karl Ockert, MBAA, 2008</li> <li>5. Practical Handbook for the Specialty Brewer – Fermentation, Cellaring, and Packaging Operations, Karl Ockert, MBAA, 2008</li> </ol>	