LBRAL2101

2015-2016

Beer organoleptic and microbiological quality

5.0 credits	30.0 h + 22.5 h	2q

Teacher(s) :	Collin Sonia (coordinator) ; Maudoux Marc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Inline resources:	Icampus
Prerequisites :	Brewing chemistry, Food technology, Food microbiology *The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes :	The different kinds of beer and the ways to produce them will be defined. The student will then learn how to conduct the sensorial analysis of a beer. This will help him to identify the chemical and biochemical steps of the manufacturing process which could be improved. Theoretical data relative to water and foam quality will be also given. The following themes will be discussed during the experimental sessions : visual parameters of a beer, quality of the water, aromas of malt, amber and brown beers, low-alcohol beer flavors, hop bitterness and aromas, fermentation aromas, sulfurous aromas, off-flavours in aged beers. The contaminants (yeasts, bacteria and molds) being able to develop in a beer will be described, as well as the available technical ways to avoid the development of microorganisms at the "critical points" of contamination. Description of the various chemical and physical treatments applied (pasteurization, sterile filtration). Controls to make in the brewery since raw materials up to the finished product.
Aims :	The course contributes to the following learning outcomes : 1.1, 1.3, 1.4, 1.5 + 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9 + 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9 (BIRC21) At the end of this course, the student will be able to - conduct sensorial analyses on different kinds of beers, - describe the organoleptic qualities and defects of a beer, - recognize the different microorganisms able to develop in beer, - develop strategies allowing to avoid such problems. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods :	Written examination. Oral presentation of a type of beer and its recipe.
Content :	The different types of beers associated to particular modes of production will be presented by groups of students. The student will then learn how to experimentally conduct a sensorial analysis, this to identify the chemical and biochemical stages of the brewing process which could modify the beer flavors. Theoretical courses on water quality and foam stability will complete the experimental sessions. The following themes will be discussed during the experimental sessions : visual parameters of a beer, quality of the water, aromas of malt, amber and brown beers, low-alcohol beer flavors, hop bitterness and aromas, fermentation aromas, sulfurous aromas, off-flavours in aged beers. The contaminants (yeasts, bacteria and molds) being able to develop in a beer will be described, as well as the available technical ways to avoid the development of microorganisms at the "critical points" of contamination. Description of the various chemical and physical treatments applied (pasteurization, sterile filtration). Controls to make in the brewery since raw materials up to the finished product.
Faculty or entity in charge:	AGRO

Programmes / formations proposant cette unité d'enseignement (UE)

Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Biochemistry and Molecular and Cell Biology	BBMC2M	5	-	
Advanced Master in Bio-engineering : Brewery	BRAS2MC	5	-	
Master [120] in Chemistry and Bioindustries	BIRC2M	5	LBRAL2106	
Master [120] in Agricultural Bioengineering	BIRA2M	5	-	