



COURSE SYLLABUS

General information

Course title:	PRODUCTION OF ATYPICAL BEER STYLES
ISVU course code:	266816
Course instructor:	
Course assistant:	
Study programme and specialization in which the course is taught:	Food processing technology
ECTS credits:	3,0
Semester of the course execution:	V.
Exam prerequisites:	Brewing technology 1; Malt production; Raw materials and by-products in the brewing industry
Course objectives:	The goal of the course is to introduce students to special styles of beer that are not generally produced in industrial breweries. Students will learn about specific technological procedures for the production of atypical styles of beer, the raw materials from which they are produced and their physico-chemical and sensory characteristics.

Course structure

Teaching mode	Number of contact hours per semester:	Student's requirements per teaching mode
Lectures:	15	80%
Exercises (auditory, linguistics):		
Exercises (laboratory, practical):	20 6	100%
Field work:	4	100%
Other:		
TOTAL:	45	

Monitoring of students' work and knowledge evaluation during the course

OUTCOMES		Colloquium 1	Colloquium 2	Seminar work	Total	Pass	Time frame for the recognition of the outcome
Outcome 1	Recognize and describe the main representatives of atypical beer styles	15%			15%	7%	By the end of the academic year
Outcome 2	Choose and explain the proper technological production process for each atypical style of beer	15%			15%	8%	By the end of the academic year
Outcome 3	Describe the specifics of each of the individual atypical styles of beer		15%		15%	7%	By the end of the academic year
Outcome 4	Explain and describe the physico-chemical and sensory characteristics of		15%		15%	8%	By the end of the academic year



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	each of the individual atypical styles of beer						
Outcome 5	Combine different raw materials and techniques to produce an atypical style of beer			40%	40%	20%	By the end of the academic year
Total % grade points		30	30	40	100	50	
Share in ECTS		0,9	0,9	1,2	3		

Knowledge evaluation on exams

Exam prerequisites						
OUTCOMES		Written exam	Oral exam	Total	Pass	
Outcome 1	Recognize and describe the main representatives of atypical beer styles	15%		15%	7%	
Outcome 2	Choose and explain the proper technological production process for each atypical style of beer	15%		15%	8%	
Outcome 3	Describe the specifics of each of the individual atypical styles of beer	15%		15%	7%	
Outcome 4	Explain and describe the physico-chemical and sensory characteristics of each of the individual atypical styles of beer	15%		15%	8%	
Outcome 5	Combine different raw materials and techniques to produce an atypical style of beer		40%	40%	20%	
Total % of grade points		60	40	100	50	
Share in ECTS		1,8	1,2	3		

Review of units per week with associated learning outcomes

Week	Lecture course content and learning outcomes:	Outcome	Exercises course content and learning outcomes:	Outcome
1.	Alcohol-free beer - legal regulations, production technology, physico-chemical and sensory characteristics	I1-5	Physico-chemical and sensory analysis of non-alcoholic beer - laboratory exercises	I1-5
2.	Production of alcohol-free beer by subsequent removal of alcohol	I1-5	Distillation of alcohol from beer with maximum preservation of its quality - process plant	I1-5
3.	Production of non-alcoholic beer using special yeast strains	I1-5	Production of non-alcoholic beer using special yeast strains - process plant	I1-5
4.	Beer with a high alcohol content	I1-5	Physico-chemical and sensory analysis of beer with a high alcohol content - laboratory exercises	I1-5
5.	Different styles of sour beer	I1-5	Acquaintance and sensory analysis of different styles of sour beer - laboratory exercises	I1-5
6.	Production of sour beer using bacterial cultures	I1-5	Identification of bacterial cultures used in the production of sour beers - laboratory exercises	I1-5



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7.	Traditional Belgian beer styles	I1-5	Sensory analysis of traditional Belgian beer styles - laboratory exercises	I1-5
8.	Lambic beer	I1-5	Physico-chemical and sensory analysis of Lambic beer - laboratory exercises	I1-5
9.	Gueuze beer	I1-5	Physico-chemical and sensory analysis of Gueuze beer - laboratory exercises	I1-5
10.	Contemporary Belgian spontaneously fermented ale beer	I1-5	Physicochemical and sensory analysis of contemporary Belgian spontaneously fermented beers - laboratory exercises	I1-5
11.	Beer with added fruit	I1-5	Sensory analysis and introduction to different styles of sour beer - laboratory exercises	I1-5
12.	Production of gluten-free beer using enzymes	I1-5	Physico-chemical and sensory analysis of gluten-free beer - laboratory exercises	I1-5
13.	Pseudocereals in the production of gluten-free beer	I1-5	Production of gluten-free beer using pseudocereals - process plant	I1-5
14.	Beer produced by aging in wooden barrels	I1-5	Field lesson - visit to a craft brewery	I1-5
15.	Other atypical beer styles	I1-5	Field lesson - visit to a craft brewery	I1-5

References (compulsory / additional)

Compulsory:

1. Kunze, W., Technology Brewing and Malting, VLB Berlin, 6. izd., Njemačka, 2019.
2. Briggs, D. E., Malts and Malting, Blackie Academic & Professional, Velika Britanija, 1998.
3. Bamforth, C. W., Brewing - New technologies, Woodhead Publishing Ltd and CRC Press, 2006.

Additional:

1. Zainasheff, J., Palmer, J.J., Brewing classic styles, Brewers publications, SAD, 2007.
- 2.