MALT AND BEER TECHNOLOGY

1	Course Title:	MALT AND BEER TECHNOLOGY
2	Course Code:	GMB5033
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	2
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. OZAN GÜRBÜZ
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi Ziraat Fakültesi Gıda Mühendisliği Bölümü 16059 Görükle/Bursa Tel: 0224 2941500 Fax: 0224 2941402 e-posta: ozang@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Introducing theorical and practical knowledge about malt and brewing
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	The students will be able to learn beer raw materials and their properties
	2	The students will be able to learn malt production technology
	3	The students will be able to learn beer production technology
	4	The students will be able to learn types, classification and composition of beer
	5	The students will be able to learn beer production faults and related analysis methods
	6	The students will be able to learn related laws and requirements
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21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	Beer description, history and beer sector in Turkey	
2	Beer raw materials and properties	

3	Malt technology: drying and roasting of barley	
4	Beer production technology: granulation	
5	Beer production technology: mashing	
6	Beer production technology: boiling, cooling	
7	Beer production technology: fermentation	
8	Beer production technology: resettle	
9	Beer production technology: special fermentation system and modern beer production methods	
10	Beer production technology: Filtration, clarification, pasteurisation	
11	Types, classification and composition of beer	
12	Types, classification and composition of beer	
13	Beer quality and stability	
14	Related laws and requirements	

22	Textbooks, References and/or Other Materials:	• Powerpoint sunumları • Kılıç O. 1996. Alkollü İçkiler Teknolojisi U.Ü Basımevi, Bursa • Malting and Brewing Science J. S. Hough, D. E. Briggs and R. Stevens Chapman and Hall ltd London 1971 • Technology of Brewing and Malting Wolfgang Kunze VLB Berlin 1996 • Malt ve Bira Teknolojisi (İsmet Türker, Ahmet Canbaş), CW, Academic pres. Londra

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	1	80.00	80.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	85.00	85.00
Total Work Load			235.00
ECTS Credit of the Course			6.00

TERM LEARNING ACTIVITIES	NUMBE	WEIGHT
Midterm Exam	0	0.00
Home work-project	1	50.00
Total	2	100.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00

Measurement and Evaluation Techniques Used in the Course	
24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	4	5	4	5	4	5	3	5	4	0	0	0	0	0	0
ÖK2	3	5	4	5	4	2	4	5	3	5	0	0	0	0	0	0

ÖK3	4	5	3	3	5	3	5	2	5	4	0	0	0	0	0	0
ÖK4	5	4	5	4	2	4	3	5	4	3	0	0	0	0	0	0
ÖK5	2	3	4	5	3	5	5	3	3	5	0	0	0	0	0	0
ÖK6	5	4	5	4	4	2	4	4	5	4	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**