Course Unit Descriptor

Study Programme: Biotechnology

Course Unit Title: Special Beers Technology

Course Unit Code: DPBI01

Name of Lecturer(s): Full Professor Jelena Pejin

Type and Level of Studies: Master Academic Deegre

Course Status (compulsory/elective): Elective

Semester (winter/summer): Summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 7

Prerequisites: None

Course Aims:

Acquisition of basic scientific and academic abilities and skills in the field of theory and production of special beers, equipment used in this production and working procedures that are applied in order to enable student to independently run individual departments of brewery as well the whole brewery, or to improve the theory and practice in special beers production.

Learning Outcomes:

The student should show knowledge about the characteristics of the production process and equipment in order to independently lead and improve the technological process of special beers production. Also, a student should be familiar with the latest knowledge in this field.

Syllabus:

Theory

Special beers, characteristics and application. Special malt types used in wort production for top and bottom fermentation. Top fermentation brewer's yeast. Stages and specificities of the top fermentation beer production - procedures and equipment. Wheat beer fermentation and production. Production of bitter, IPA, porter, stout, lambic, bock beers, etc. Production of beer with reduced ethanol content: low alcohol and non-alcoholic beers. Production of beer with reduced energy value: light and dietary beer. Production of ice beers. Beer based products.

Practice

Laboratory practical lessons of the special beers production and quality control of special beers.

Required Reading:

1. C. Bamforth: Brewing: New Technologies, CRC Press and Woodhead Publishing Ltd., Cambridge, 2006.

2. K. Ockert, Raw Materials and Brewhouse Operations, MBBA Practical Handbook for the Speciality Brewer, The Master Brewers Association of the Americas, St. Paul, Minnesota, USA, 2006.

3. K. Ockert, Fermentation, Cellaring, and Packaging Operations, MBBA Practical Handbook for the Speciality Brewer, The Master Brewers Association of the Americas, St. Paul, Minnesota, USA, 2006.

4. C. Bamforth: Brewing: New Technologies, CRC Press and Woodhead Publishing Ltd., Cambridge, 2006.

5. C. Bamforth: Scientific Principles of Malting and Brewing, American Society of Brewing Chemists, St. Paul, MN, USA, 2006.

Weekly Contact Hours: 7	**Lectures:** 4	**Practical work:** 3

Teaching Methods:

Interactive lectures using video presentations, individual laboratory practical lessons and consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	
Practical work	25	oral exam	30
Preliminary exam(s)	40	…….	
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.