Course name:

FACULTATIVE SPECIALIZATION SUBJECT II - CEREAL AND FLOUR BASED PRODUCTS

ECTS	4
Course status	directional - optional (available for the learning path)
Course final assessment /evaluation of outcomes	graded pass
Prerequisite	no prerequisites

Main field of study*: *Food Technology

Educational profile	General academic
Code of studies and education level	bachelor
Semester of studies	summer
Language of instruction	English

Course offered by:

Name of faculty offering the course	Faculty of Food Technology
Name of department offering the course	Department of Carbohydrate Technology and Cereal Processing
Course coordinator	dr hab. inż. Rafał Ziobro, prof. URK

Learning outcomes:

Symbol of outcome	Description of the learning outcome	Reference to main field of study outcomes	Area symbol*
KNOWLEDGE – student knows and understands			
FT15_W1	basic cereal species, their structure and properties; grain storage methods, types of grain stores; milling mixes, subsequent stages of grain pretreatment, principles of milling, basic differences between wheat and rye flours	TŻ1_W02 TŻ1_W03 TŻ1_W12 TŻ1_W13	RT
FT15_W2	flow charts for the production of traditional (groats and flakes) and modern cereal and flour based products, preparation of pasta and noodles	TŻ1_W02 TŻ1_W12 TŻ1_W13	RT
FT15_W3	basic ingredients of bread; dough preparation methods; baking of wheat, rye and mixed bread; physical, chemical and biological changes occurring during fermentation and thermal treatment	TŻ1_W03 TŻ1_W12 TŻ1_W13	RT
FT15_W4	causes and prevention of bread defects; bread ageing and staling; special bakery products	TŻ1_W03 TŻ1_W12 TŻ1_W13	RT
SKILLS – student is able to			
FT15_U1	use appropriate analytical methods to assess the quality of the grain and determine the suitability of the grain lot for processing	TŻ1_U07	RT
FT15_U2	use appropriate analytical methods to evaluate the quality of the flour and assess the suitability of the flour batches for baking of bread	TŻ1_U07	RT
FT15_U3	control the correctness of technological processes at individual stages of dough preparation and baking and apply appropriate analytical methods to assess the quality of bread	TŻ1_U05 TŻ1_U06 TŻ1_U07	RT
SOCIAL COMPETENCIES – student is ready to:			
FT15_K1	assess the risks arising from the use of inappropriate raw materials and technologies	TŻ1_K04	RT
FT15_K2	creative search for ways to use new raw materials and technologies in grain processing	TŻ1_K01	RT

Teaching contents

Lectures	30 hours
Topics	Chemical composition of cereal grain, its structure and methods of preservation Preparation of grain for milling - black and white cleaning, conditioning of grain before milling process Grain milling principles and differences in wheat and rye milling Screening and grading of flour Modern cereal and flour based products Pasta and noodles Bread formulations and technologies Dough preparation methods for wheat, rye and other types of bread Bread quality and staling Breakfast cereals and snacks
Accomplished learning outcomes	*FT15_W1; FT15_W2; FT15_W3; FT15_W4*
Means of verification, rules and criteria of assessment	*written test; 60% correct answers for positive outcome. Weight-50%.*
Classes:	30 hours
Topics	Grain structure; evaluation of technological suitability of various cereals Properties of flours based on Polish Standards Trial baking of wheat, rye and mixed bread using a straight method Baking of confectionery goods Quality assessment of bread
Accomplished learning outcomes	*FT15_U1; FT15_U2; FT15_U3; FT15_K1; FT15_K2*
Means of verification, rules and criteria of assessment	*- laboratory activity- weight 10%* *- 4 partial tests (51% points) - weight 40%*

References:

Basic	1 Elke K. Arendt, Emanuele Zannini, Cereal grains for the food and beverage industries, Woodhead publishing 2013, 2. Stanley P. Cauvain and Linda S. Young, Baked products: science, technology and practice, Blackwell Publishing Ltd 2006 3. Y. H. Hui, Bakery Products: Science and Technology, Blackwell Publishing Ltd 2006
Supplementary	1. W. P. Edwards, The Science of Bakery Products, The Royal Society of Chemistry 2007 2. Paula Figoni, How baking works: exploring the fundamentals of baking science, John Wiley & Sons, 2008

Structure of learning outcomes

Area of academic study: R – Agricultural, forestry and veterinary sciences		ECTS **
Area of academic study: T – technological sciences	4	ECTS**

Structure of student activity

Contact hours		64	hrs.	2,6	ECTS**
Including:	lectures	30	hrs.		
	classes and seminars	30	hrs.		
	consultations	2	hrs.		
	participation in research	0	hrs.		
	obligatory traineeships	0	hrs.		
	participation in examination	2	hrs.		
e-learning		0	hrs.	0	ECTS**
student own work		36	hrs.	1,4	ECTS**

*Areas of academic study in the fields of: H- humanities; S - social studies; P – biological sciences; T – technological sciences; M- medical, sport and health sciences; R – Agricultural, forestry and veterinary sciences; A – the arts
** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes