DESCRIPTION OF THE SAFE_14 MODULE IMPLEMENTED AS PART OF THE INTENSIVE FORM OF EDUCATION (IFoE)

Module Name	*Modern food processing methods 2*			
Language of Instruction	english			
Module Purpose	The aim of the module is to familiarize students with the possibility of using extrusion-cooking in the production of plant-based meat substitutes and high-protein preparations, the characteristics of raw materials and additives, the basic and auxiliary equipment used in the process, quality requirements and methods for assessing protein texturants.			
Module Content	The lecture includes a presentation of methods for producing plant-based meat substitutes and high-protein preparations based on plant-based raw materials, including gluten-free ones. Exercises include the production of extruded products using specialized equipment, conducting color and texture tests on the products, and preparing a test report.			
Description of learning outcomes	Effect Symbol	Effect Name Methods	Verification and Documentation	Reference to Directional Effect Set
	KNOWLEDGE (graduate knows and understands)			
	W1	Knows and understands the principles of pressure-heat processing of food in the context of food safety.	Graded assessment, written test, assessment report, archiving of assessment papers.	SAFE_W02
	W2	Knows and understands the relationship between raw material selection, product quality, and process efficiency.	Graded assessment, written test, assessment report, archiving of assessment papers.	SAFE_W03
	SKILLS (graduate can)			
	U1	Can select process conditions to produce the intended product characteristics.	Graded assessment, written test, assessment report, archiving of final assignments.	SAFE_U02
	U2	Can prepare a report on the production and testing of food products.	Class report.	SAFE_U04

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	SOCIAL COMPETENCES (graduate is ready to)			
	K1	Ready to collaborate in planning food production and testing	Participation in speeches and discussions	SAFE_K02
Module crediting method	Tests with a grade			
ECTS credit balance (total, developing practical skills, from classes conducted using distance learning methods and techniques)	Number of contact hours/ECTS points		Number of non-contact hours/ECTS points	
	Lectures (hours 1 ECTS points 0.04) Classes (hours 1 ECTS points 0.04) Consultations (hours 0.5 ECTS points 0.02) Assessment (hours 0.5 ECTS points 0.02)		Reading literature (hours 1 ECTS points 0.04) Preparing for credit (hours 1 ECTS points 0.04)	
	Total contact hours 3 hr. 0,12 pt. ECTS		**Total non-contact hours 2 hr. 0,08 pt. ECTS**	
Staffing	dr hab. inż. Maciej Combrzyński, dr inż. Marek Milanowski			
Information on the infrastructure ensuring the implementation of learning outcomes	The classroom is equipped with a multimedia projector for lecture presentations. The laboratory is equipped with a processing machine with appropriate equipment to prepare food products, as well as texture measurement equipment to test food texture and to prepare test reports. The classroom and laboratory are accessible to people with disabilities.			
Planned teaching methods	Lecture in the form of a multimedia presentation, exercises in the unit's laboratory using available equipment.			

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Recommended reading list	Mościcki L. (Ed) Extrusion-cooking techniques : applications, theory and sustainability, Weinheim, Wiley-VCH Verlag, 2011 Maskan M., Altan A. Advances in food extrusion technology, Boca Raton, CRC Press Taylor & Francis Group, 2012 Sun Da-Wen Emerging technologies for food processing [dokument elektroniczny], Elsevier, 2007 Khetarpaul N. Food processing and preservation, Delhi, Daya Publishing House, 2005 Paine F. Modern processing, packaging and distribution systems for food, Glasgow, Blackie, Van Nostrand Reinhold Company, 1987 Brennan J. Food processing handbook [dokument elektroniczny], Wiley InterScience, 2006 Richgardson P. Thermal technologies in food processing, Boca Raton, Cambridge, CRC Press, Woodhead Publishing, 2001 Fellows P. Food processing technology: principles and practice, Boca Raton, Cambridge, CRC Press, Woodhead Publishing, 2000

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