DESCRIPTION OF THE SAFE_18 MODULE IMPLEMENTED AS PART OF THE INTENSIVE FORM OF EDUCATION (IFoE)

Module Name	*HACCP Food Quality System*
Language of Instruction	english
Module Purpose	The aim of this module is to familiarize students with the HACCP food safety management system within the context of food engineering, with particular emphasis on the principles of the green transition. Participants will acquire knowledge of the operational principles of the HACCP system in relation to sustainable development, food safety, and environmental protection. Students will gain an in-depth understanding of the HACCP system, recognizing the interdependencies between hygienic aspects of food health safety and biological, chemical, technological, and economic factors that influence the efficiency of processes in agriculture and the food industry. They will also explore the impact of harmful environmental factors on human health and life, as well as habits that promote the preservation of natural resources, sustainable lifestyles, and ecological awareness. Furthermore, students will develop competencies in managing practical improvement strategies related to the identification of hazards and critical control points in food engineering, in alignment with green transition principles specifically addressing energy consumption, pollutant emissions, and the potential for reducing food waste.

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<table>
<tr><td>Module Content</td><td colspan="4">The lectures will cover fundamental knowledge of the HACCP food safety system, with particular emphasis on its relevance to sustainable development and food safety. Topics will include the food production chain in the context of health safety, the GHP (Good Hygiene Practice) and GMP (Good Manufacturing Practice) systems, and key legal regulations. Students will learn the principles of implementing and operating the HACCP system, as well as the types of food hazards biological, chemical, and physical.
Food hygiene will be presented as a core component of the HACCP system, including causes of foodborne illnesses in the food industry and pathways through which microorganisms enter processing facilities. The course will also address hygiene principles in food production, storage, transportation, and distribution, highlighting their importance for both sustainable development and consumer health protection.
Additional topics include hygiene of premises and equipment in agri-food processing plants, stages of HACCP system implementation, and practical application of HACCP principles in agri-food processing. Students will explore Critical Control Points (CCPs), critical limits of monitored parameters, CCP monitoring systems, and HACCP documentation and record-keeping procedures. The benefits of implementing HACCP in agri-food processing will be characterized in detail.
Practical classes will enable students to analyze and visualize the challenges of implementing, operating, and controlling the HACCP system in agri-food processing. Students will work collaboratively in teams to develop HACCP implementation projects tailored to selected technological process flows.</td></tr>
<tr><td rowspan="3">Description of learning outcomes</td><td>Effect Symbol</td><td>Effect Name Methods</td><td>Verification and Documentation</td><td>Reference to Directional Effect Set</td></tr>
<tr><td colspan="4">KNOWLEDGE (graduate knows and understands)</td></tr>
<tr><td>W1</td><td>Demonstrates knowledge and understanding of the principles of implementation, operation, and control of the HACCP system, as well as its impact on food and health safety, with particular emphasis on the green transition.</td><td>A written paper covering topics presented during the course.</td><td>SAFE_W01</td></tr>
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	W2	Demonstrates an understanding of the health and environmental implications of implementing the HACCP system in the agri-food sector, taking into account consumer health safety, toxicological risks, energy consumption, pollutant emissions, and the impact on sustainable development.	A written paper covering topics discussed during the course.	SAFE_W02 SAFE_W03
	SKILLS (graduate can)			
	U1	Demonstrates the ability to analyze the effectiveness and health safety of the implemented HACCP system within the food chain, based on scientific evidence, and to evaluate its impact on human health and the natural environment.	Group work, participation in discussions – assessment of activity in class (answers to questions introducing the exercises), colloquium.	SAFE_U01 SAFE_U02

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	U2	Demonstrates the ability to interpret research findings related to the quality, shelf life, and nutritional value of products originating from facilities equipped with food safety systems, and to select or appropriately adjust the implementation of Critical Control Points (CCPs) within the technological process flow.	Team work, participation in topic analysis – assessment of teaching activity (answers to questions introducing the exercises), colloquium.	SAFE_U03
	SOCIAL COMPETENCES (graduate is ready to)			
	K1	Demonstrates a responsible attitude in making technological decisions, taking into account health, ecological aspects, and the principles of sustainable development in food production and processing.	Evaluation of the student's performance as a leader and member of a team performing an exercise or project.	SAFE_K01 SAFE_K02
Module crediting method	Passing 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	
	Lecture 1 hour 0.04 ECTS points Classes 2 hour 0.08 ECTS points		Literature reading 0.5 hour 0.02 ECTS points Preparing a presentation 0.5 hour 0.02 ECTS points Preparing for credit 1 hour 0.04 ECTS points	
	Total contact hours 3 hr. 0,12 pt. ECTS		**Total non-contact hours 2 hr. 0,08 pt. ECTS**	

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Staffing	Prof. MSc. HSc. Wioletta Żukiewicz-Sobczak
Information on the infrastructure ensuring the implementation of learning outcomes	Classes will be held in food technology laboratories and multimedia classrooms, enabling the implementation of learning outcomes in knowledge, skills, and social competencies. Students will have access to modern equipment used in food preservation processes and specialized equipment for microbiological and chemical analysis. Classes will be conducted in classrooms equipped with multimedia technologies, supporting interactive learning. The university ensures accessibility for people with disabilities – the buildings have ramps, elevators, adapted restrooms, hearing systems, and electronic teaching materials.
Planned teaching methods	Lectures using multimedia techniques will take place in the classroom. Exercises using active methods will take place in the laboratory (practical exercises, discussions, teamwork in groups, reports on exercises, and a colloquium).
Recommended reading list	http://www.fao.org/docrep/W8088E/W8088E00.htm https://www.fao.org/4/y5307e/y5307e00.htm John G. Surak & Steven Wilson, editors: The Certified HACCP Auditor Handbook https://safegroproject.com/wp-content/uploads/2024/09/Certified_HACCP-Auditor.pdf https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022XC0916(01)

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