DESCRIPTION OF THE SAFE_01 MODULE IMPLEMENTED AS PART OF THE INTENSIVE FORM OF EDUCATION (IFoE)

Module Name	*Management of digital data on farms*			
Language of Instruction	english			
Module Purpose	To be introduced to methods of data analysis in agricultural enterprises. To develop skills in data processing, interpretation and visualisation. To acquire competence in the use of analytical tools for decision-making in agricultural enterprises.			
Module Content	Students will learn the basics of data analysis needed in agricultural farms, with particular emphasis on working in R. They will learn how to process, visualise and model data using libraries such as tidyverse and ggplot2. This module also covers anomaly detection and the construction of simple predictive models with a particular focus on practical applications in agricultural enterprises.			
Description of learning outcomes	Effect Symbol	Effect Name Methods	Verification and Documentation	Reference to Directional Effect Set
	KNOWLEDGE (graduate knows and understands)			
	W1	Graduate has theoretical and practical knowledge of data structures and methods of processing them. Knows computational methods and algorithms for data processing using the R language.	Class report	SAFE_W01
	SKILLS (graduate can)			
	U1	Graduate can collect, process and analyse data from various sources using the R environment.	Class report	SAFE_U03
	U2	Graduate can prepare reports and data visualisations	Class report	SAFE_U04

	SOCIAL COMPETENCES (graduate is ready to)			
	K1	graduete is prepared to critically evaluate data and analysis results, understanding their impact on farm management decisions.	Class report	SAFE_K01
Module crediting method				
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 2 ECTS points 0,08) Consultations (hours 0 ECTS points 0) Assessment (hours 0 ECTS points 0)		Reading literature (hours 2 ECTS points 0,08) Preparing a presentation (hours 0 ECTS points 0) Preparing for credit (hours 0 ECTS points 0)	
	Total contact hours 3 hr. 0,12 pt. ECTS		**Total non-contact hours 2 hr. 0,08 pt. ECTS**	
Staffing	PhD Jacek Ogrodniczek			
Information on the infrastructure ensuring the implementation of learning outcomes	The course is conducted in a lecture room equipped with modern multimedia equipment, including a projector and a screen. A stable high-speed internet connection is provided, enabling access to digital resources during classes. Students work at computer workstations that allow them to use specialized software for data analysis in agriculture. The technical infrastructure is regularly updated and maintained to support the proper achievement of the learning outcomes. For students with disabilities, access is ensured by an elevator located next to the classroom, which facilitates free movement within the building.			
Planned teaching methods	lecture, practical classes			
Recommended reading list	• Wickham H., Grolemund G. – R for Data Science: Import, Tidy, Transform, Visualize, and Model Data James G., Witten D., Hastie T., Tibshirani R. – An Introduction to Statistical Learning: with Applications in R			