

Co-funded by the Erasmus+ Programme of the European Union 	BeWell – Big Data & Analytics competence matrix	
EQF Level:	5-7	ESCO: <u>Analyse large-scale data in healthcare</u> (Skill)
Aggregated Units of Learning Outcomes	BeWell – U1.9	Big Data & Analytics

		BeWell			
Generic Title of the Unit:		U1.9 – Big Data & Analytics			
Description:		Big Data & Analytics encompasses clinical databases, programming language (SQR), relational databases, and clinical data processing (statistical analysis and machine learning)			
EQF Level:		5-7			
Learning Outcomes					
BeWell U-1.9	Training Module Code	Competence (Autonomy and responsibility)			
		Knowledge		Skills	
1.1 Introduction to clinical database	TD09-M1	Is able to use and study clinical databases on an introductory level			
		Understands the importance of studying clinical databases for clinical data evaluation		Combines data from different tables in a clinical database	
		Knows how to visualise clinical data and extract data by SQL queries		Extracts clinical data from a large database for further analysis	
		Understands the basic structure of relational databases		Upload data and inspect data in a relational database	
1.2 Machine Learning approaches for Medicine	TD09-M2	Ability to productively use simple Machine Learning approaches in their work tasks			
		Understanding the difference between classification and clustering		Selecting the appropriate approach required in practical settings	
		Understanding the difference between supervised and unsupervised ML approaches		Selecting the appropriate approach required in practical settings	
		Understanding overfitting and cross-validation		Preventing overfitting issues in ML approaches	
		Basic knowledge of linear regression		Using linear regression tools	
		Basic knowledge of other supervised ML approaches		Using other major supervised approaches	

1.3 Using R for developing and testing Machine Learning approaches	TD09-M3	Ability to use open software R to perform ML analyses	
		Understanding how to implement complexity reduction approaches for linear regression in R	Using R to create, run and analyse linear regression models
		Understanding how to implement k-NN and k-means approaches in R	Using R to create, run and analyse k-NN and k-means
		Understanding likelihood-based inference and model-based clustering and how to implement them in R	Using R to create, run and analyse likelihood-based inference and model-based clustering