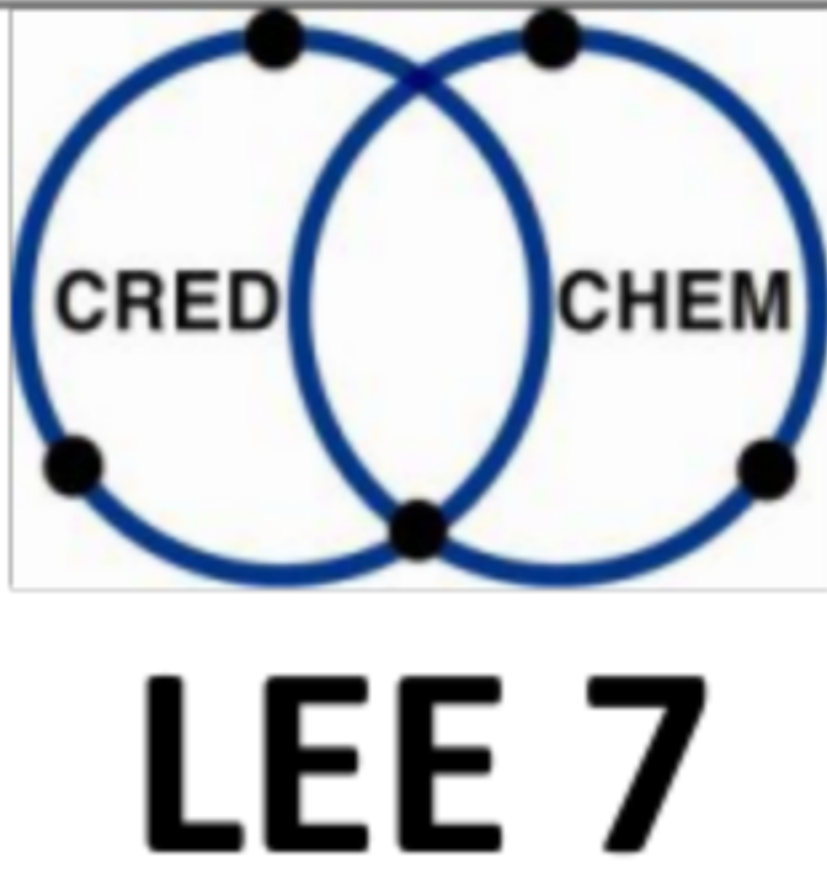
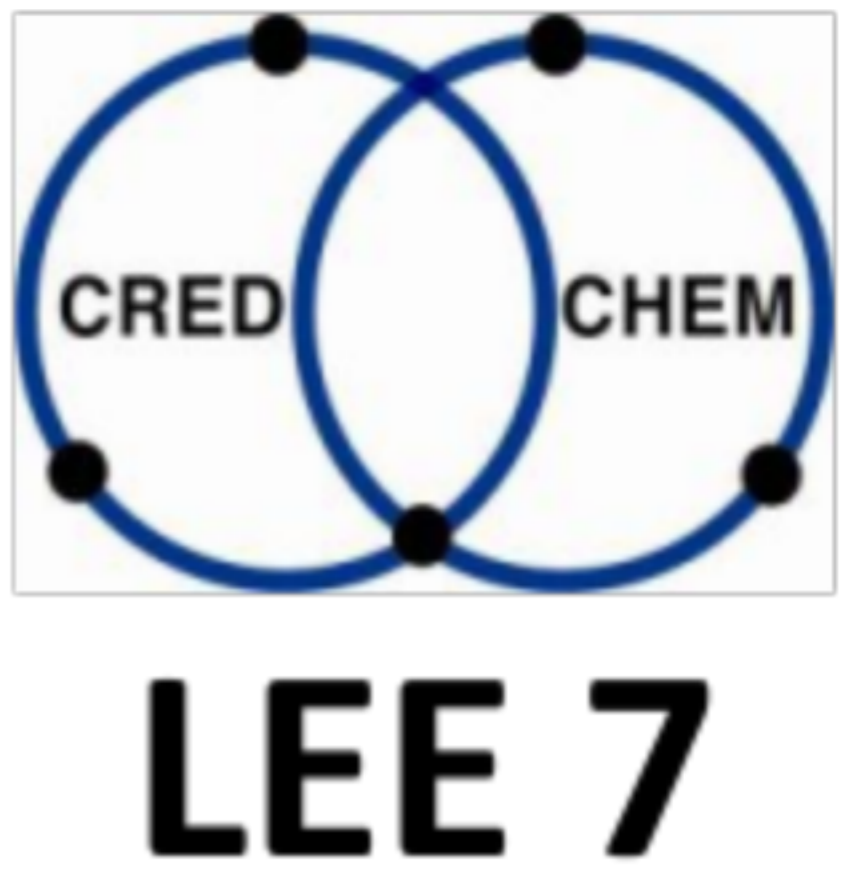


Field of action	Working in the laboratory				
Learning outcome unit	7 - Synthesis methods				
EQF level	Competence level A: EQF level 3 Competence level B: EQF level 4 Competence level C: EQF level 5				
Relations to national qualifications	BG	CZ	DE	IT	SK
					Chemical technician, chemical laboratory technician, chemical technician for special organic analyses, chemical technician for special inorganic analyses, chemical laboratory assistant
Learning outcomes					
Competence¹		Skills		Knowledge	
Competence level A (EQF level 3) - produces substances via multi-step synthesis by using standard methods and adapts these methods to the given conditions		- accepts orders for production of substances (multi-step) and plans all further processing steps until supplying the result - selects methods, respective laboratory equipment and necessary chemicals (solvents...) depending on the property/ structure of the substances and handles them accurately, carefully and expertly - evaluates results and calculates respective values prepares and evaluates the analysis expertly and utilises analysis methods to determine the specification of the intermediates (corresponds to competence of learning outcome 1 and 5)		- knows substances (properties, structure, R/S statements) - knows respective methods (knows steps of action) - knows respective equipment/ apparatuses and their functioning/ operation	
Competence level B: (EQF level 4) - deals with problems typical for the methods		- analyses the problem, develops solution approaches by applying specialist knowledge and decides how to solve the problem - reflects on whether the problem was actually solved		- knows dependence of reaction process (conversion, reaction rate) on reaction conditions - knows reactions which the methods are based on	
Competence level C: (EQF level 5) - optimises methods according to context in cooperation with the team		- works as part of the team, is actively involved in the work process and thus brings the work process forward - communicates with others about scientific and technological content (application of specialist knowledge) and about the work process		- knows structure-property relationship - knows kinds of reaction with corresponding mechanisms and equations of individual synthesis steps (knows relationship between structure of reactants, reaction mechanism and reaction result)	

¹ The competence levels build upon each other.

Field of action	Working in the laboratory					
Learning outcome unit	7 - Synthesis methods					
Countries	BG	CZ	DE	IT	SK	
Which CREDCHEM learning place offers the learning outcome unit?					Secondary Technical School Novaky	
How many learners can be admitted?					4	
At which competence level is the learning outcome unit offered?					A	
In which language is the mobility taught?					English/German	
Which methods are used?	Multi-step synthesis methods, application of various analysis methods in-between the individual steps					
The following occupational tasks² (which can also be used for imparting the learning outcomes) have been exemplarily analysed in preparing the LEE:						
Multi-step organic synthesis – generalised						
The following examination tasks were designed for the competence levels indicated:					Competence level	
none						

² Occupational and examination tasks can be downloaded at www.credchem.eu.