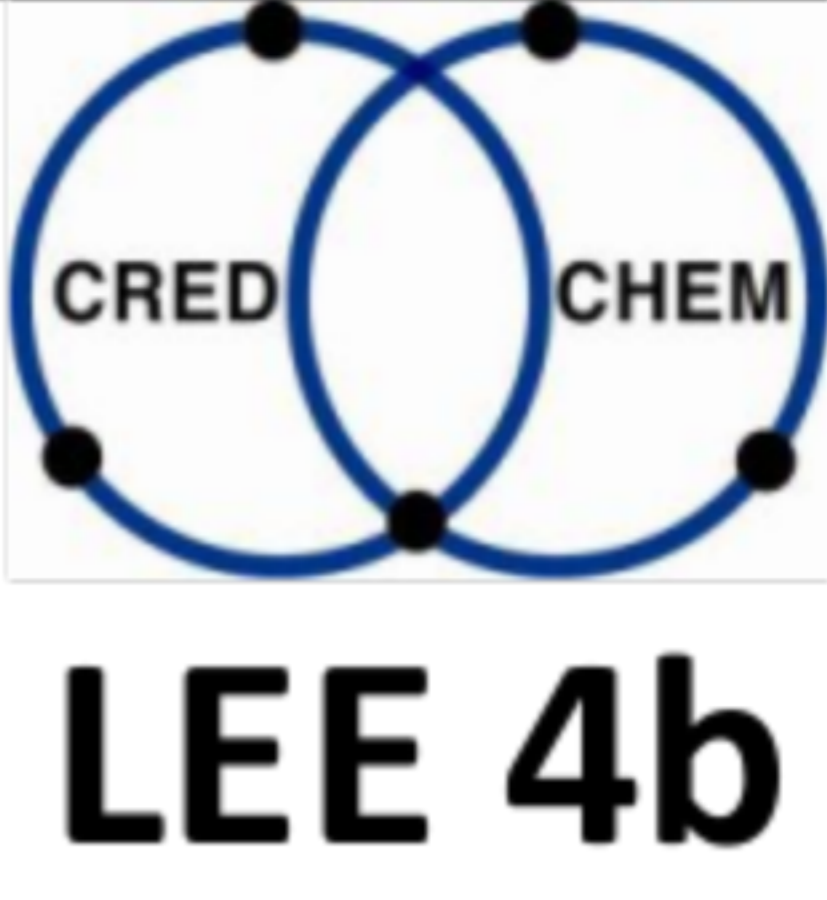
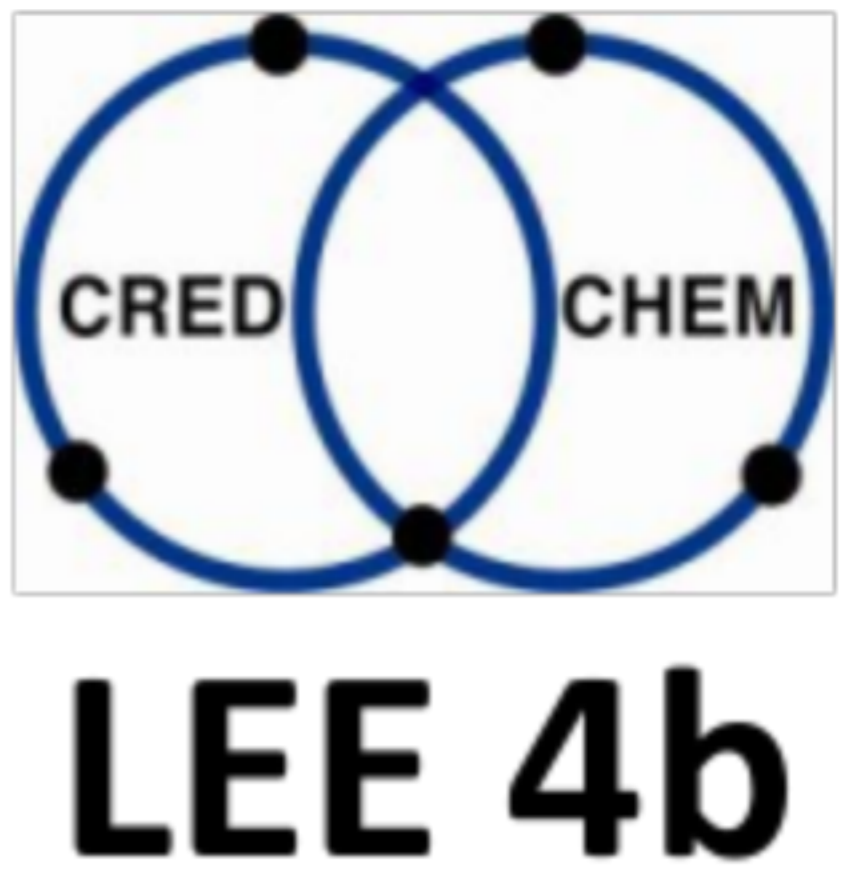


Field of action	Working in the laboratory				
Learning outcome unit	4b - Gravimetric analysis of substances				
EQF level	Competence level A: EQF level 3 Competence level B: EQF level 4 Competence level C: EQF level 5				
Relations to national qualifications	BG	CZ	DE	IT	SK
		Chemical technician, chemical laboratory technician	Chemical laboratory technician		Chemical technician, chemical laboratory technician, chemical technology modeller, chemical laboratory assistant
<b>Learning outcomes</b>					
<b>Competence<sup>1</sup></b>		<b>Skills</b>		<b>Knowledge</b>	
<b>Competence level A (EQF level 3)</b> - analyses substances gravimetrically by using the standard methods and adapts these methods to the given conditions		- accepts orders for gravimetric analysis of substances 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 (corresponds to competence of learning outcome 1 and 2)		- knows substances (properties, structure, R/S statements) - knows respective methods (knows steps of action) - knows respective equipment/ apparatuses and their functioning/ operation	
<b>Competence level B: (EQF level 4)</b> - 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 values to be measured on environment conditions (temperature, pressure...) - knows reactions which the methods are based on	
<b>Competence level C: (EQF level 5)</b> - 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 structural characteristics of a material which are responsible for its properties - knows relationship between measurand (mass) and determinant (i.e. concentration) - knows relationship between the fundamental chemical principle and the practical use of gravimetry	

<sup>1</sup> The competence levels build upon each other.

<b>Field of action</b>	<b>Working in the laboratory</b>					
<b>Learning outcome unit</b>	<b>4b - Gravimetric analysis of substances</b>					
<b>Countries</b>	<b>BG</b>	<b>CZ</b>	<b>DE</b>	<b>IT</b>	<b>SK</b>	
<b>Which CREDCHEM learning place offers the learning outcome unit?</b>		Technical School Valasske Mezirici	Saxon Education Company for Environmental Protection and Chemical Occupations Dresden Ltd.		Secondary Technical School Novaky, Secondary Technical School Bratislava	
<b>How many learners can be admitted?</b>		3	3-4		10	
<b>At which competence level is the learning outcome unit offered?</b>		A, B	A		A, B, C	
<b>In which language is the mobility taught?</b>		English	English/German		English/German	
<b>Which methods are used?</b>	Gravimetry					
<b>The following occupational tasks<sup>2</sup> (which can also be used for imparting the learning outcomes) have been exemplarily analysed in preparing the LEE:</b>						
Gravimetric determination of ash						
Gravimetric determination of margarine						
Gravimetric determination of calcium ions						
Gravimetric determination of iron ions						
<b>The following examination tasks were designed for the competence levels indicated:</b>					<b>Competence level</b>	
Gravimetric determination of margarine					A, B, C	
Gravimetric determination of calcium ions					A, B, C	

<sup>2</sup> Occupational and examination tasks can be downloaded at [www.credchem.eu](http://www.credchem.eu).