

UNIT	COMPETENCE AREAS	COMPETENCE	COMPETENCE LEVEL		
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			<i>Common European framework/</i>		
			6	6/7	7
<b>I Sustainable Usage of Transboundary Water Resources</b>	<b>I.1</b> Water-Resources Assessment	<b>I.1.1</b> To assess surface and underground water resources and their rational use	<b>I.1.1 b</b> To give a general characteristic of transboundary water resources distribution in space and time	<b>I.1.1 a</b> To assess surface and underground water resources and their rational use via archival or field hydrometeorological data processing and analysis	<b>I.1.1 e</b> To analyze and assess water resources of any territory taking into account their complex use, protection and restoration
	<b>I.2</b> Present Day Use (Current State) of Water Resources	<b>I.2.1</b> To assess the current state of water resources and prospects for their use	<b>I.2.1 b</b> To assess anthropogenic impact on water resources and to perform water quality control	<b>I.2.1 a</b> To identify types and sources of anthropogenic impact on water resources, to assess environmental efficiency of the water control activities and restoration of aquatic ecosystems	<b>I.2.1 e</b> To perform calculations for water use regulation/ standardization; to estimate efficiency of environmental projects designed to decrease negative impact on aquatic ecosystems; to predict anthropogenic impact on water resources

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<b>II Legal and Regulatory Support for Transboundary Water Resources Management</b>	<b>II.1</b> Legal and Regulatory Support for Transboundary Water Resources Management	<b>II.1.1</b> To be well-informed about the current national and international legislation and regulatory documentation for the water resources management and water industry operations	<b>II.1.1 b</b> To apply to legal information systems, to find the relevant law, to monitor changes to acts and environmental management regulations	<b>II.1.1 a</b> To be well-informed and follow the changes to national and international legislation and regulatory documentation for the water resources management and water industry operations	<b>II.1.1 e</b> To adopt the International Best Practices for water resources management
	<b>II.2</b> Legal and Regulatory Support for Conflict Resolution in the sphere of Water Resources Management	<b>II.2.1</b> To manage and resolve water disputes, in particular judicial ones	<b>II.2.1 b</b> To cite legal acts and materials of water legislation; to apply law to facts and to analyze water legal relations arising on or after	<b>II.2.1 a</b> To analyze operative facts, legal standards and ecological legal relations, to take decisions and act in strict accordance with legal and regulatory criteria	<b>II.2.1 e</b> To devise standart and specific legislation, administrative acts in the sphere of water resources management and protection in order to prevent and / or eliminate identified violations
		<b>II.2.2</b> To manage and resolve transboundary water disputes	<b>II.2.2 b</b> To assess environmental quality objectives and regulatory policies for technological processes that have an impact on the environment in the transboundary region	<b>II.2.2 a</b> To interpret and adopt administrative regulation in decision-making process concerning the environmental policy	<b>II.2.2 e</b> To improve production and environmental efficiency of the control system for environmental protection in accordance with international water legal and regulatory criteria

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<b>III</b> <b>State-of-the-art Technologies for the Water Networks and Facilities Engineering</b>	III.1 Water Engineering Survey	<b>III.1.1</b> To organize water engineering survey and manage engineering researches required prior to construction and maintenance of water management facilities	<b>III.1.1 b</b> To obtain and generate information for the solution of current water management problems and water engineering survey issues in compliance with the legal procedure, state-of-the-art methods for water engineering ecological survey and safety measures policy	<b>III.1.1 a</b> To apply modern approaches to the primary data processing and interpretation in carrying out researches in strict accordance with current legislation regulating the scope of researches and the key methods for desk and field studies performance	<b>III.1.1 e</b> To organize water engineering survey and manage engineering researches for water networks and facilities construction and maintenance in compliance with the current legislation and state-of-the-art methods for water engineering survey
		<b>III.1.2</b> To develop the project documentation	<b>III.1.2 b</b> To analyze regulatory, methodical and normative documents for compiling scientific and technical reports, project summary, reviews and document profiles	<b>III.1.2 a</b> To analyze methodologies for surveys implementation on the basis of the environmental data available, to select appropriate strategies from the options presented, to interpret new facts on the basis of observations, experiences, scientific analysis, empirical evidence	<b>III.1.2 e</b> To develop the project documentation: technical specifications for execution of engineering surveys, research and development expenditures, technical report on the engineering survey implementation
		<b>III.1.3</b> To assess technical performance of engineering and	<b>III.1.3 b</b> To assess environmental safety of engineering surveys performed	<b>III.1.3 a</b> To analyze regulatory, methodical and normative documents, and to provide relevant recommendations	<b>III.1.3 e</b> To carry out expertise of engineering survey results, and to

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		environmental surveys for the water networks and facilities		for environmental compliance issues coordination	provide guidelines for ensuring engineering survey effectiveness
<b>III.2</b> Water Networks and Facilities Engineering and Maintenance	<b>III.2.1</b> To make decisions related to water networks and facilities engineering and maintenance	<b>III.2.1 b</b> To assess the network of people and sectors of economy with the environment in the transboundary region, to carry out thorough feasibility studies of the project development	<b>III.2.1 a</b> To implement modern methods and techniques with the priority of water networks and facilities high reliability and stability, and to enable their functional use	<b>III.2.1 e</b> To carry out the water networks and facilities optimization in order to address potential risks for a human and environment	
<b>III.3</b> Engineering and Hydrological Surveys and Hydrologic Modeling Systems	<b>III.3.1</b> To conduct engineering and hydrological surveys using mathematical modelling techniques	<b>III.3.1 b</b> To verify primary data reliability, to select the method for the calculation of the hydrological phenomena statistical parameters in the context of primary data volume	<b>III.3.1 a</b> To conduct engineering and hydrological surveys using modern information technologies for hydrological processes modeling	<b>III.3.1 e.</b> To assess and to predict the hydrological processes using mathematical modelling techniques, and to identify key assumptions and risks together with the appropriate mitigation strategies	
<b>III.4</b> Water and Wastewater Treatment Engineering	<b>III.4.1</b> To assess and to adopt wastewater treatment engineering technologies	<b>III.4.1 b</b> To determine water consumption data by local communities and industrial sites, and to determine volume and number of wastewater pollutants	<b>III.4.1 a</b> To establish estimated cost of waste water, to select wastewater treatment facilities, and to assess wastewater treatment efficiency	<b>III.4.1 e</b> To devise a complex of the sanitary actions and engineering constructions providing timely collection, proper cleaning, neutralization and disinfecting of the wastewater accumulated on the territory of local communities and industrial sites	

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<b>IV Joint Monitoring of Transboundary Water Systems</b>	IV.1 Water Monitoring Systems	<b>IV.1.1</b> To organize monitoring of water bodies and systems	<b>IV.1.1 b</b> To implement projects on ecological monitoring, to apply observation and assessment methods, to determine priority parameters for water monitoring	<b>IV.1.1 a</b> To develop environmental compliance monitoring programs under various land use planning and management issues; to establish monitoring and measurement tools and methods	<b>IV.1.1 e</b> To develop and to implement joint monitoring of transboundary water systems, analyze the results, and have an outlook on the future development
		<b>IV.1.2</b> To perform transboundary water resources quality control	<b>IV.1.2 b</b> To reveal conditions of quality formation and relative risks of surface and underground waters pollution	<b>IV.1.2 a</b> To interpret results of environmental monitoring and to give an assessment of water quality	<b>IV.1.2 e</b> To develop criteria for water quality assessment
		<b>IV.1.3</b> To provide reference materials quality assurance and control in the sphere of water management	<b>IV.1.3 b</b> To address potential risks for the environment and to assess the environmental impact of constructions and operations	<b>IV.1.3 a</b> To interpret the correlation of environmental and socio-economic factors in the course of ecological situation development in the transboundary region, and to devise a problem-solving approach	<b>IV.1.3 e</b> To identify the problems of an effective system development for transboundary water objects management, use and protection; and to develop suggestions for water monitoring system improvement according to the level of anthropogenic impact on water resources

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<b>V</b> <b>Special Features of Water Resources Management in the Transboundary Basins</b>	<b>V.1</b> Integrated Water Resources Management in the Transboundary Basins	<b>V.1.1</b> To make administrative decisions for optimization and improvement of the control system of the current state and use of water resources	<b>V.1.1 b</b> To develop and support system of the normative documents regulating the organization of technological ecological works	<b>V.1.1 a</b> To assess problems of water use in the region and to develop the plan of measures on ecological audit, control of ecological requirements implementation, ecological management	<b>V.1.1 e</b> To assess the ways of rational and complex use of transboundary water resources, to make the economic analysis of water management systems functioning, to calculate and estimate water management activity in the urbanized territories
		<b>V.1.2</b> To assess the level of impact on water objects	<b>V.1.2 b</b> To perform calculations of admissible dumpings of pollutants into water objects, to develop normative documents in the field of wastewater management	<b>V.1.2 a</b> To perform calculations in the field of processing and recycling	<b>V.1.2 e</b> To assess efficiency of methods for processing and recycling
	<b>V.2</b> Investment Planning Cycle for Transboundary Water Resources Management	<b>V.2.1</b> To carry out investment analysis of the water management project at all levels	<b>V.2.1 b</b> To assess the level of economic activity impact on the environment and in particular on the current state of water objects	<b>V.2.1 a</b> To perform information and analytical maintenance of decision-making process in the sphere of water management (including activities for environmental protection)	<b>V.2.1 e</b> To assess environmental risks of the project implementation, influence of eco-hydrological factors on the current state of the environment, to perform examination of documentation throughout the process of environmental impact assessment

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	<b>V.3</b> Hydrotechnical Objects and Systems Management	<b>V.3.1</b> To organize control system and optimal operation of water resources in the industry-specific and multi-purpose water reservoirs	<b>V.3.1 b</b> To address potential risks of flooding via the water catchment system	<b>V.3.1 a</b> To carry out alternative water management calculations for water reservoirs; to provide scheduling and dispatching for water catchment systems	<b>V.3.1 e</b> To assess requirements of each water management sector to the mode of water resources use and regulation
	<b>V.4</b> Recultivation of Water Bodies	<b>V.4.1</b> To estimate efficiency of methods for the recovery of water bodies natural productivity; to develop Waters Restoration Plan	<b>V.4.1 b</b> To identify the nature and extent of water bodies pollution; to define methods and management approaches to effective preventive maintenance and water bodies recultivation	<b>V.4.1 a</b> To develop and implement activities for prevention and (or) recultivation of water objects and water ecosystems	<b>V.4.1 e</b> To implement in practice the programs for the environmental rehabilitation of water bodies and water-catchment areas up to their environmental conditions and economic use
	<b>V.5</b> Management of Organizations [The Environmental Management System in water enterprises]	<b>V.5.1</b> To organize and lead individual and team work; to perform document management	<b>V.5.1 b</b> To develop and introduce the Environmental Management System in water enterprises (ISO/GOSTR 14001)	<b>V.5.1 a</b> To carry out specific tasks and objectives in the Environmental Management System in water enterprises	<b>V.5.1 e</b> To organize and lead the standard Environmental Management System in water enterprises
	<b>V.6</b> Professional Communication in the sphere of Water Management	<b>V.6.1</b> To perform effective oral and written communication in the workplace with local agencies,	<b>V.6.1 b</b> To prepare and submit analytical reports on the requested information	<b>V.6.1 a</b> To make oral reports (speeches) and exchange written communications (letters, inquiries, replies, official notes, references,	<b>V.6.1 e</b> To carry out information exchange about the current State of the Environment (import export of data) with information systems in other regions and countries

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		administrative authorities, oversight and supervision bodies officials		analytical reports) with water enterprises and potential partners	
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<b>VI Applied Computer Technologies for TWRM</b>	<b>VI.1</b> Applied Software and GeoInformation Systems for Transboundary Water Resources Management	<b>VI.1.1</b> To adopt applied software and geoinformation systems for transboundary water resources management; to create and use databases in the sphere of water management	<b>VI.1.1 b</b> To develop cartographic projections and water management base geo-data	<b>VI.1.1 a.</b> To adopt technologies of geomodelling and the spatial analysis in GIS	<b>VI.1.1 e</b> To develop complex GIS-projects for Transboundary Water Resources Management