



Education, Audiovisual and Culture Executive Agency (EACEA)

Ms. Anna GRELLI, Project Officer

ERASMUS + CBHE Project no. 619239-EPP-1-2020-1-ME-EPPKA2-CBHE-JP
„Development of Regional Joint Master Program in Maritime Environmental Protection and Management - MEP&M“

SUBJECT: REQUEST FOR APPROVAL OF EQUIPMENT SPECIFICATION

Dear Ms. Grelli,

Based on our initial request (e-mail dated April 6th 2022) for approval of equipment specifications for the project 619239-EPP-1-2020-1-ME-EPPKA2-CBHE-JP / "Development of Regional Joint Master Program in Maritime Environmental Protection and Management - MEP&M," and following your answer (e-mail dated May 12th 2022) with request for additional information, please find the following clarifications:

- Please mention in a dated and signed letter of request (with the logo of the coordinating institution and with a reference to the grant agreement) the new equipment that you plan to purchase and why, name the beneficiary(ies) and inform us about the foreseen cost in EUR (for each equipment item and globally);**

A new regional joint master program in Maritime Environmental Protection and Management will be the first of such kind for all 3 universities and for both countries, Montenegro and Albania.

It will be organized in the form of blended learning, partially online (via streaming and recorded lectures) and in-person. Practical exercises and assessments are scheduled to take place in person.

Thus, initial specification of equipment (from the application), prepared by project coordinator, included three different equipment categories: different IT equipment for distance learning, e-books and equipment for teaching/practical exercises for students. The following table shows the original equipment proposal with a predicted budget for each partner university:

Duplicate Row		4. Equipment Costs		
245,000.00				
Name of Partner (to encode in overview sheet)	Country (to encode in overview sheet)	Nature, type and specifications of the item	Amount Excluding VAT (EUR)	Total (EUR)
University of Montenegro	Montenegro	E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment, conference room) and e-Books	105,000.00	105,000.00
Aleksander Moisiu University of Durres	Albania	E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) and e-Books	70,000.00	70,000.00
University Ismail Qemali	Albania	E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment), e-Books and equipment for water quality monitoring	70,000.00	70,000.00

Foreseen equipment in the table indicates that distance learning equipment and e-books were attributed to all three universities (University of Montenegro, Alexander Moisiu University of Durres and University Ismail Qemali of Vlore), while equipment for water quality monitoring was attributed to just one university (University Ismail Qemali of Vlore). Distance learning equipment should include all necessary equipment for recording and production of lectures, for transmission of in-person lectures from one to another universities, for storage of video materials etc., e-books for the students and professors, while equipment for water quality monitoring should be used for enhancing skills of students through case based teaching/practical exercises for some of courses within a new master degree program. Indeed, negligence is the reason for leaving water quality monitoring equipment off the equipment list for the other two institutions, since total equipment budget for other two universities is the same (Alexander Moisiu University of Durres) or even higher (University of Montenegro) comparing to the total equipment budget for University Ismail Qemali of Vlore.

In early project implementation, program HEIs (University of Cadiz (Spain), University Cote d’Azur (France), and the University of Ljubljana (Slovenia)) provided a report on new challenges faced by the European Higher Education Area during and after COVID 19 pandemic, their master degree programs related to the topic of Maritime Environmental Protection and Management and online teaching technology and methodology (WP1 DEV1.1). After providing GAP analysis (WP DEV 1.2), the model for introducing a new master degree program was proposed within WP1 DEV 1.3.

To provide a case-based learning master degree program in different topics of Maritime environmental protection and management, the Consortium proposed next equipment to be provided in order to use the budget in the best possible way so that the new master program may be implemented effectively:

University of Montenegro	No.	Name	Description	Quantity	Unit price (excl. VAT)	Total (excl. VAT)
	1	IT equipment for distance learning				42,000.00 €
	2	Underwater equipment for seawater visual and quality monitoring				37,000.00 €
	3	E-books				4,000.00 €
	4	Air Drone for visual sea and coastal monitoring				3,000.00 €
	5	Upgrade of air quality monitoring equipment				19,000.00 €
	Total					105,000.00 €
University of Vlore	No.	Name	Description	Quantity	Unit price (excl. VAT)	Total (excl. VAT)
	1	IT equipment for distance learning				39,000.00 €
	2	Underwater equipment for seawater visual and quality monitoring				25,000.00 €
	3	E-books				3,000.00 €
	4	Air Drone for visual sea and coastal monitoring				3,000.00 €
	Total					70,000.00 €
University of Durres	No.	Name	Description	Quantity	Unit price (excl. VAT)	Total (excl. VAT)
	1	IT equipment for distance learning				39,000.00 €
	2	Underwater equipment for seawater visual and quality monitoring				25,000.00 €
	3	E-books				3,000.00 €
	4	Air Drone for visual sea and coastal monitoring				3,000.00 €
	Total					70,000.00 €

The Consortium believes that offering tools to assist students in improving their abilities through case-based learning and practical exercises is vital to obtaining a cutting-edge master's degree program. This is what differentiates modern case-based learning from pure theoretical one.

I would like to emphasize that this master degree program will provide students with knowledge of solving and managing different issues of sea and coastal pollution and degradation (including all kinds of seawater pollution from blue economy activities, coastal air pollution mainly from maritime transport, coastal zone degradation from construction activities and seawater level increase, etc). Thus, equipment/sensors related to seawater and air quality pollution detection and coastal video surveillance is, a low cost equipment (it is not a professional equipment which is significantly more expensive; also, existing sensors at University of Montenegro for air pollution/particulate matter detection were provided by another Erasmus + CBHE project), needed for conducting basic practical/field exercises and for students to obtain necessary skills, which will be used after their graduation in their companies/institutions.

In addition to draft proposal, next equipment is suggested: equipment for video surveillance of the coastline (air drone with camera) for all three universities and upgrade of existing equipment for the coastal air pollution detection for University of Montenegro (low cost gas sensors related to emission from shipping such as SO_x/O₃/NO_x/CO/CO₂, in addition to existing particulate matter sensors, with data analysis software). Also, equipment for sea water quality monitoring and surveillance which was initially attributed only to Ismail Qemali University of Vlore, was also now attributed to University of Montenegro and Alexander Moisiu University of Durres.

IT equipment for Distance Learning is subject to disrupted global supply chain since beginning of COVID 19 pandemic. Thus, specification of this equipment must be prepared in such manner so it could be delivered as soon as possible upon decision of supplier of goods within public procurement procedure.

Although we did not specify equipment categories with separate price estimations in the initial budget proposal, we can say that equipment specification is partially changed. By this, the total budget for the equipment for each partner will not be changed and will follow the provision of the Grant and Partnership Agreement, as it can be seen from previous tables.

2. Please mention in your letter of request to which specific objective(s), output(s)/outcome(s) and activity(ies) each equipment item refer and will contribute to.

As mentioned previously, new master program in Maritime Environmental Protection and Management is planned to be organized in form of blended learning, partially online (via streaming and recorded) and in-person. Practical exercises are planned to be conducted in-person.

All proposed equipment is relevant to accreditation and implementation of interdisciplinary master degree program in different topics of Maritime Environmental Protection and Management.

For the master degree program accreditation process (both national and regional with additional approval of Montenegrin and Albanian Governments) it is necessary to have adequate equipment for practical/field exercises of students in order to receive positive decision of accreditation bodies.

Usage of each piece of equipment for the practical exercises will be defined in each course/subject syllabus under a category of list of practical exercises. This is expected to be defined under WP2 DEV2.1, latest July 15th 2022. Next is proposed draft curricula with short description of topics to be covered by each course (WP2 DEV 2.1):

#	Sem.	Course title	# of hours	ECTS	O/E	Short description of topics to be covered by each course
1	I	Research skills, methods and tools	2+2+0	10	O	<p>Conducting quality research requires practical skills and a particular contextual framework, which are the focus of this introductory module. Emphasis is placed on workshop opportunities to develop and practice skills in research planning and analysis, communication, writing and oral presentation. In addition, data sources, standards, and statistical tools will be introduced, prior to data analysis and representation. Statistical approaches, including factor analysis, will be provided to students to conduct high quality research for the study of the marine environment.</p> <p>Keywords: scientific approach, research planning, database, sampling & experimental design, data analysis, communication.</p>
2	I	Fundamentals of environmental science, pollution and sustainable development	2+2+0	10	O	<p>A solid foundation in the basic principles and unifying concepts of the environmental sciences is crucial to addressing MEP&M topics. This module covers the major themes of modern environmental science involving humans and sustainability: such as maintaining biodiversity and natural resources; and sustaining environmental quality and human societies. Students will gain an awareness of the importance of Earth systems (atmosphere, hydrosphere, lithosphere, biosphere) in sustaining our daily lives, as well as the scientific foundations and tools necessary to apply critical thinking to contemporary environmental issues, with a particular focus on the United Nations Sustainable Development Goals and their implementation.</p> <p>Keywords: environmental science, sustainable development, society, earth systems, UN SDGs, pollution</p>
3	I	Introduction to the Blue Economy	2+2+0	10	O	<p>The emergence of the blue economy highlights the need to integrate multidisciplinary concepts related to exploitable marine resources. The different sectors will be introduced: fisheries & aquaculture, sustainable coastal tourism, shipping, offshore mineral extraction, and recent developments in bioprospecting and biotechnology in relation to agri-food, pharmaceutical and cosmetic opportunities. The module will address integrated maritime policy, marine spatial planning directive and blue growth policies. The legislative tools concerning the ownership of marine and maritime resources and the main governance systems that govern these properties, including the concepts of intellectual property and value redistribution will also be tackled. Finally, the way these activities are managed and regulated in various regions of the world will be discussed, as well as the opportunities and impacts of these sectors for the development of the economy.</p>

						<p>Keywords: blue economy, blue growth, fisheries, aquaculture, tourism, shipping, mining, biotechnology, bioprospecting, agri-food, pharmaceutical, cosmetics, policy, marine spatial planning, governance, intellectual property, value redistribution</p>
4	II	Marine ecology and conservation	2+1+1	10	O	<p>Basic elements of marine ecology on ecosystems and biodiversity are explored, with the main threats posed by human and the main conservation measures. On an ecological point of view, students explore theories and models in marine ecology, understand and identify the main processes and patterns, and identify the similarities and differences between systems. In relation to human development, students also identify and comprehend the main anthropogenic impacts on marine ecosystems, and they identify the most suitable objects for the protection of ecosystems from anthropogenic threats. Finally, on more practical and legal aspects, students learn how to implement the scientific process of creating an MPA and the legal principles governing marine environmental issues at national and European level.</p> <p>Keywords: ecology, conservation, ecosystems, biodiversity, anthropogenic threats, protection, MPA</p>
5	II	Marine environmental pollution and prevention	2+1+1	10	O	<p>This module will explore the types and sources of marine contamination (seawater and air pollution) and their effects on marine ecosystems, such as eutrophication, sewage and algal blooms, bacterial contamination, ballast water, micro and macro waste, oil pollution and contamination of emerging concerns. The international agreements and conventions for the prevention of marine pollution will be explored together with the legal principles governing marine environmental issues at the national and European level, such as MARPOL, BWMC and the AFS Convention. Tools for monitoring and reporting pollution will be provided, such as Environmental Risk Assessment, Environmental Sensitivity Maps and Contingency Plans for contamination episodes. Finally, strategies for bioremediation of marine environmental pollution will be discussed.</p> <p>Keywords: marine pollution, contamination, eutrophication, prevention, monitoring, risk assessment, contingency, bioremediation</p>
6	II	GHG emission and climate change mitigation policies	2+1+1	10	O	<p>This module covers the scientific, legal and societal aspects of climate change. First, students will examine the science of climate change, the physics of the greenhouse effect, the current state of the descriptors (GHG, temperature, water...), and the expected consequences of the latest IPCC reports. The international legal and political framework of climate change will also be discussed, especially regarding shared responsibilities and ongoing discussions and the history of emissions. A particular focus will be brought on how to react, both on mitigation and adaptation. Mitigation, which aims at reducing greenhouse gas emissions and carbon sequestration,</p>

						<p>notably through nature-based solutions. And adaptation, which aims to reduce the vulnerability of natural and human systems against the effects of climate change, and thus to safeguard our societies. The issue of financing climate change will be addressed, both in terms of financing response mechanisms and the cost of the consequences. All these elements will be put into perspective in the context of climate change planning.</p> <p>Keywords: climate change, greenhouse effect, temperature, IPCC, mitigation, adaptation, carbon sequestration, nature-based solution, climate finance, climate change planning</p>
7	III	Environmental management standards and Impact Assessment	2+2+0	10	O	<p>The module is designed to introduce the ISO 14000 series of environmental management standards and the concepts, procedures, and methodology of environmental impact assessment (EIA). Students will be invited to develop a critical awareness of the factors affecting the use of EIA as a part of project management in the legislative and regulatory context of newly industrialized and less industrialized countries. This module will expose students to the need for environmental impact assessments and how to prepare the various documents required by state and federal regulations. Environmental risk assessment processes for contaminants will be explained as well as analytical methodologies and implementation of quality standards.</p> <p>Keywords: environmental impact assessment, EIA, ISO 14000, environmental management standards, environmental risk assessment, quality</p>
8	III	Elective course #1	2+1+1	10	E	To be selected by student
9	III	Elective course #2	2+1+1	10	E	To be selected by student
		Sustainable Development of Maritime transport and ports				<p>The state of the art of maritime transport of goods and people will be exposed and shipping will be discussed as a source of contamination of marine ecosystems. The environmental risk assessment of anthropogenic discharges from shipping will be addressed, integrating the regulatory framework of wastewater discharges from cruises. Bioremediation aspects of shipping wastewater discharges will be addressed, as well as sustainable water services in port areas (water supply) and sustainable waste services. The transition to green shipping and decarbonization will be discussed extensively, including fuel and related emissions (Sulphur Directive), but also offsetting solutions integrating nature-based solutions. Finally, this module will develop economic, social and environmental indicators for EU ports, sustainability indexes and international conventions in place.</p> <p>Keywords: maritime transport, shipping, cruise, wastewater, bioremediation, waste, transition, offset, nature-based solution, port</p>

		Sustainable Development of Coastal tourism			<p>The concept of sustainable tourism, particularly as applied to coastal areas, is developed in this module. The spatial expression of tourism developments in coastal areas is addressed, in particular to measure the dimension of the phenomenon. Furthermore, the economic, social and environmental consequences of the "sun and beach" tourism model are discussed. Furthermore, this module details territorial planning, an instrument for the sustainable management of tourism developments in coastal areas, and landscape management as a tourism resource. Finally, the place of tourism in protected natural areas will be discussed, with a particular focus on integrated planning and management of tourism in coastal areas. Case studies, recitations and recommendations are made by the students.</p> <p>Keywords: maritime transport, shipping, cruise, wastewater, bioremediation, waste, transition, offset, nature-based solution, port</p>
		Management of offshore energy and mineral resources			<p>This module introduces students to the study of marine mineral resources, with a focus on soil and subsoil exploration and prospecting techniques; mineral evaluation and exploitation methods. The aspects related to energy resources in marine sedimentary basins are addressed, notably through petroleum systems, hydrated gases, and the sustainability of exploration and exploitation of hydrocarbons. The mineral resources are explored, both on continental margins on the ocean basins. Finally, a particular focus is proposed on the role of offshore energy in Europe, and its description through the analysis of the Marine Spatial Planning (MSP) initiatives of different countries. Case studies, recitations and recommendations are made by the students.</p> <p>Keywords: mineral resources, soil, exploration, prospection, exploitation, energy, petroleum, hydrated gas, hydrocarbons, offshore, marine spatial planning</p>
		Fisheries management			<p>This module provides basic knowledge on the biology and population dynamics of fishery resources, on the selectivity of fishing gears and on the mapping of fishery resources. Students will acquire skills in assessment methods for the development and analysis of fisheries resources, always with a view to sustainable fisheries management. Students determine the status and productivity of a fishery resource and the impact of fishing on that resource and the environment. This module aims to develop some knowledge as real as possible of the state of exploitation and the evolution of the resource, by understanding the dynamics of the exploited populations. Case studies, recitations and recommendations are made by the students.</p>

					<p>Keywords: fish biology, fisheries, population dynamics, fishing gears, sustainable fisheries management, model</p>
		Integrated Coastal Management			<p>The conceptual aspects, principles, foundations and objectives of ICZM and marine spatial planning (MSP) are developed in this module. The integration of the physical-natural, socio-economic and legal-administrative dimensions of coastal areas for sustainability is considered. In addition, the management of interactions between terrestrial, marine and river spaces in the coastal zone is addressed. In a more applied manner, this module explores techniques, tools and mechanisms for problem analysis, planning, decision making, management and monitoring implementation of decision making, and public participation. Case studies, recitations and recommendations are made by the students.</p> <p>Keywords: fish biology, fisheries, population dynamics, fishing gears, sustainable fisheries management, model</p>
		Management of protected marine areas and species			<p>Threat assessment systems for marine species are discussed in this module, including the IUCN Red List of Threatened Species and the Green List of Protected and Conserved Areas. The various protection instruments are detailed, including the marine protected area networks, Natura 2000, the OSPAR networks, and the UNEP SPAMI list. A description of the MPA governance framework (European framework) is proposed and the place of MPA protection in the Marine Strategy Directive and in Marine Spatial Planning (MSP) is discussed. Finally, students reflect on the establishment of MPA management plans through case studies. Case studies, recitations and recommendations are made by the students.</p> <p>Keywords: threat assessment, IUCN, Marine Protected Area, MPA, Natura 2000, OSPAR, SPAMI, Marine Spatial Planning, management plan, business plan</p>
		Maritime safety and security			<p>The development of blue growth and in particular maritime navigation must be based on the assurance of a secure maritime space. This module focuses on the globalization of maritime transport. The international conventions are explained, such as MARPOL, SOLAS, MLC, STCW and CLC. The opposition between traditional and open registries (flag of convenience) are discussed, as well as the role of classification societies, the notion of flag state versus port state and port state control. Case studies, recitations and recommendations are made by the students.</p> <p>Keywords: maritime safety, security, maritime transport, MARPOL, flag, flag state, port state</p>

		Entrepreneurship & Blue Innovation			<p>The emergence of blue growth requires innovation, and therefore entrepreneurship. This module aims to provide the necessary skills to identify and evaluate business opportunities in sectors such as aquaculture, fishing, offshore industries, shipping, biotechnology, or tourism. It should also enable students to identify and evaluate public and private resources available for the development of a start-up, and to apply the knowledge acquired to the development of an innovative project. Putting all these issues into perspective requires developing an awareness of the environmental and social issues that arise from maritime activities.</p> <p>Keywords: blue growth, innovation, entrepreneurship, business opportunity, start-up, financing, social responsibility, sustainable business model</p>
13	IV	Professional practice/research		12	
14	IV	Master degree thesis		18	

Equipment for distance learning (IT and related equipment) and e-books will be used for each course/subject. Equipment (seawater and air quality related equipment) for conducting practical/field exercises will be included in majority of proposed courses/subjects, such as:

1. Fundamentals of environmental science, pollution and sustainable development
2. Marine ecology and conservation
3. Marine environmental pollution and prevention
4. GHG emission and climate change mitigation policies
5. Environmental management standards and Impact Assessment
6. Sustainable Development of Maritime transport and ports
7. Management of offshore energy and mineral resources
8. Fisheries management
9. Integrated Coastal Management
10. Management of protected marine areas and species

Thus, specific objective(s) covered by proposed equipment proposal include:

1. Based on state-of-the-art in Maritime Environmental Protection and Management education and research, to develop regional joint interdisciplinary MSc program on English language for students and professionals having at least BSc degree, to address the long-term needs in specific issues of coastal and marine environmental protection and management in South Adriatic and Ionian Seas, thus strengthening international competitiveness of Montenegrin and Albanian HEIs.
2. To build up human and technical capacities of PC HEIs to support new MSc program in MEP&M.

These specific objectives will be addressed through realization of next outcomes and activities:

WP2. Master curricula development.

- DEV 2.1 Development of master program curricula
- DEV 2.2 Development of teaching materials and methodology
- DEV 2.3 Development of e-lectures
- DEV 2.4 Accreditation of master program curricula
- DEV 2.5 Start-up and self-evaluation of master program

WP3. Capacity Building through staff training and equipment purchase.

DEV 3.1: Procurement of equipment and e-books for supporting distance learning in MSc MEP&M

DEV 3.2: Know-how transfer to technical staff related to the usage of equipment for supporting distance learning

DEV 3.4: Know-how transfer to teaching staff related to the MEP&M

3. Please attach to your letter of request a complete list comparing in two different columns (1) the equipment as initially detailed in the annex I of the grant agreement (description of the action) to (2) the requested revised list of equipment.

The following table compares in two different columns, (1) the equipment as initially proposed in the annex I of the grant agreement (description of the action), and (2) the requested revised list of equipment.

University	Initial equipment	Suggested equipment
Ismail Qemali University of Vlore	<ul style="list-style-type: none"> • E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) • e-Books • Equipment for water quality monitoring 	<ul style="list-style-type: none"> • IT equipment for distance learning • Underwater equipment for seawater visual and quality monitoring • E-books • Air Drone for visual sea and coastal monitoring
Alexander Moisisu University of Durres	<ul style="list-style-type: none"> • E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) • e-Books 	<ul style="list-style-type: none"> • IT equipment for distance learning • Underwater equipment for seawater visual and quality monitoring • E-books • Air Drone for visual sea and coastal monitoring
University of Montenegro	<ul style="list-style-type: none"> • E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) • e-Books 	<ul style="list-style-type: none"> • IT equipment for distance learning • Underwater equipment for seawater visual and quality monitoring • E-books • Air Drone for visual sea and coastal monitoring • Upgrade of air quality monitoring equipment

Table in excel is also attached to this letter (Attachment #1).

4. Please attach to your letter of request a proposed revised budget (in EUR) of equipment costs (Excel format) as detailed in the budget attached to your proposal (sheet 4. Equipment costs only).

Total budget for the equipment for each partner will not be changed, and will remain consistent with the Grant and Partnership agreements. The following table gives total budget overview:

University	Initial equipment spec.	Initial total budget	Suggested equipment spec.	Suggested total budget
Ismail Qemali University of Vlore	<ul style="list-style-type: none"> E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) e-Books Equipment for water quality monitoring 	70.000 eur	<ul style="list-style-type: none"> IT equipment for distance learning Underwater equipment for seawater visual and quality monitoring E-books Air Drone for visual sea and coastal monitoring 	70.000 eur
Alexander Moisisu University of Durres	<ul style="list-style-type: none"> E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) e-Books 	70.000 eur	<ul style="list-style-type: none"> IT equipment for distance learning Underwater equipment for seawater visual and quality monitoring E-books Air Drone for visual sea and coastal monitoring 	70.000 eur
University of Montenegro	<ul style="list-style-type: none"> E-learning platform (servers, storage, software, lecture room, working stations, multimedia equipment) e-Books 	105.000 eur	<ul style="list-style-type: none"> IT equipment for distance learning Underwater equipment for seawater visual and quality monitoring E-books Air Drone for visual sea and coastal monitoring Upgrade of air quality monitoring equipment 	105.000 eur

Table in excel is also attached to this letter (Attachment #2).

Bearing on mind previously stated and considering that this is a completely new joint master program with new topic for all three universities, having all of this equipment will provide necessary preconditions for its successful accreditation, implementation, sustainability and, as a result, the Erasmus + MEP&M project.

Dear Ms. Grelli, I hope that we were more clear this time about the equipment.

Thank you for understanding and support.

We all are at your disposal for further information.

Kind regards,

Kotor, Montenegro

16.05.2022.

Project coordinator



[Handwritten signature]
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