



Up-Sailing - Cultivating Marine skills in Maritime Sector
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Up-Sailing

Cultivating Green Skills in Maritime Sector

Project Result 1: Preparation of Up-Sailing Curriculum

Finalization of Curriculum Outline

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MODULE 1

Green Skills in the Maritime/Shipping Sector: current and future trends

LEARNING OBJECTIVES

This module identifies current and future trends in the Maritime/Shipping Sector in terms of green technologies and protocols.

This module is valid for all of the three Curricula:

- Curriculum for VET Institutes
- Curriculum for Current Employees
- Curriculum for Shipowners (consider that the duration per each unit will be 45 min instead of 1h)

UNIT	LEARNING OUTPUTS	DURATION
1. Key policies, protocols and good practices for the maritime/shipping sector at international and EU level - EU initiatives and projects to promote green shipping	Becoming aware of the legal framework (including customary law) which regulates the maritime/shipping sector at international and EU level / to explore EU initiatives and projects which can be beneficial for shipowners with regards to green skills/practices and establish "channels of communication" with their consortia for further information.	1 h



2. Description of green(er) technologies and their applicability in the maritime/shipping sector (including reduction of carbon emissions and use of renewable energy resources, advanced routing or blended	To be updated on the latest developments in terms of the reduction of carbon emissions and the use of renewable energy resources (available machinery, alternative ways of sailing, environmentally-friendly shipbuilding, operation, maintenance, dismantling or docking at ports etc).	1 h
3. The importance of the preservation of marine resources and aquaculture and the ways maritime/shipping industries can support the cause	Becoming aware of maritime/shipping industry imprint on both sea nature and human beings living in coastal areas.	1 h
4. Garbage pollution and sustainable waste management, including recycling/upcycling on board, at shore and inside ports	To discover how to reduce/eliminate garbage pollution either on board or at shore and design or implement efficiently a plan for sustainable waste management / to explore the implementation of recycling/upcycling solutions on board and suggest new ideas.	1 h
<i>Self-reflection activity "Designing an environmentally friendly operating process or protocol"</i>		30 min
<i>Quiz Assessment</i>		10 min
TOTAL TIME		4h 40 min



MODULE 2

Challenges in the implementation of Green Skills Maritime/Shipping Sector

LEARNING OBJECTIVES

This module presents the existing or underlying challenges in the implementation of green technologies and protocols in the maritime/shipping sector.

This module is valid for all of the three Curricula:

- Curriculum for VET Institutes
- Curriculum for Current Employees
- Curriculum for Shipowners (consider that the duration per each unit will be 45 min instead of 1h)

UNIT	LEARNING OUTPUTS	DURATION
1. Technological paradox (e.g. current capacities and future requirements) in the maritime/shipping sector - the need for investments in supporting infrastructure (e.g. ports) to enable integration of green(er) technologies	Understanding the technological limitations in view of the implementation of green(er) protocols in maritime/shipping sector / to become aware of the difficulties in attracting investments, improving or building a newsupporting infrastructure.	1 h



2. Environmental vs funding/profit equilibrium - violations and disruptions of the international and EU framework	Recognizing that maritime/shipping sector needs to remain profitable in order to keep facilitating people's movement and access to commodities but, at the same time, to realize the critical importance for counterbalancing the exploitation of the seas with environmental measures and sustainable practices / to realize that, despite the existence of international regulations in the maritime/shipping sector, the reality may differ as international competition and less flexible national laws may render the existing framework null and void and put the environment at risk.	1 h
3. Safety risks and health hazards for seafarers and maritime staff from the introduction of new technologies	Identifying the (potential) effects of new technologies on seafarers' and marine staff's safety and security as well as to propose ways to protect themselves against negative consequences.	1 h
4. Existing gaps in staff's education and training	Realizing the inefficiencies and gaps that are observed in the current maritime/shipping sector's seafarers and staff and discover ways on how to address this issue.	1 h
<i>Self-reflection activity "Transforming challenges into opportunities: finding convincing arguments to persuade policymakers to take measures in order to address the above challenges efficiently"</i>		30 min
<i>Quiz Assessment</i>		10 min
TOTAL TIME		4h 40 min



MODULE 3

Raising environmental consciousness among the maritime/shipping industry for the applicability of green skills in everyday operation

LEARNING OBJECTIVES

This module aims at raising awareness on the concept of environmental consciousness and offering ideas on how to implement it in practice.

This module is valid for the Curricula:

- Curriculum for VET Institutes
- Curriculum for Current Employees

UNIT	LEARNING OUTPUTS	DURATION
1. Standard "on-board" operations to eliminate accidental pollution or disposal of dangerous waste in the seas (e.g. security inspection, quality control in cargos etc)	Learning about existing or potential environmentally-friendly operations that could be implemented on board and make shipping a greener human activity.	1 h
2. Digitalization and automation as a facilitator of environmental protection	Understanding the impact of digitalization in the maritime/shipping sector, to familiarize with existing digital/AI tools as part of the operating process but with a view towards environmental protection (e.g. less-paper-policy, reduction of waste etc) and be able to evaluate and suggest improvements in case of inefficient implementation.	1 h



3. Problem-solving and crisis management in case of (unintentional) pollution: implementing protocols	Learning about existing protocols of handling unintentional pollution and be able to implement them in practice in case it is necessary.	1 h
4. Spreading the word: how can associates, clients and public can support environmentally-friendly vessel operation	Raising awareness on environmental protection within the maritime/shipping sector and to engage in peer-to-peer activities in order to motivate other professionals to perform their tasks in a greener way.	1 h
<i>Self-reflection activity "Becoming a role model for environmental protection of the seas"</i>		1 h
Quiz Assessment		10 min
TOTAL TIME		5h 10 min



MODULE 3

Sustainable shipping

LEARNING OBJECTIVES

This module focuses on innovative technologies or operational practices in terms of green shipping.

This module is valid for the Curriculum:

- Shipowners

UNIT	LEARNING OUTPUTS	DURATION
1. Blue economy: profitable solutions for all	Realizing that the introduction of green(er) policies in maritime/shipping sector works for the long-term benefit of all.	45 min
2. ESG (Environmental Social and Corporate Governance) as a modern business model in the shipping/maritime sector	Recognizing ESGs' benefits and introduce it as a new operating model either on board or at shore.	45 min
3. Alternative energy power: paradigms, opportunities and threats	Understanding the benefits of alternative energy power both with regards to the environment and profitability/survival of the businesses	45 min



4. Incentives for the introduction of greener technologies/policies in the maritime/shipping sector	Exploring any legal, structural, mechanical, financial or other incentive for the introduction of greener technologies/policies in the maritime/shipping sector and decide which is the best approach to make use of them as well as to promote them to other shipowners, stakeholders and policymakers for joint actions	45 min
<i>Self-reflection activity "Reconciling environmental protection with profit: how to adapt the maritime/shipping sector and respective micro-economies in sustainable planning"</i>		30 min
<i>Quiz Assessment</i>		10 min
TOTAL TIME		3h 40 min



MODULE 4

VET as a hub

LEARNING OBJECTIVES

This module offers ideas on how to transform VET schools in hubs that bridge VET with the world of employment.

This module is valid for the Curriculum:

- VET Institutes

UNIT	LEARNING OUTPUTS	DURATION
1. Green mentorship in the maritime/shipping sector and inter-generational learning among colleagues	Learning how to identify your mentor (usually a person one respects and values their opinion, with longer experience) and how to perform active listening in order to benefit from their expertise and on-the-job knowledge with a focus on green practices.	1 h
2. Building networks of collaboration and exchange of good practices	Recognizing the importance of establishing a professional network and be able to develop one.	1 h
3. Green Skills and Active Citizenship in the shipping/maritime sector	Connecting the development of green skills in the maritime/shipping sector with the concept of Active Citizenship and realize that environmental protection within a professional field goes far beyond its strict limits and shapes one's overall value system and lifestyle.	1 h



4. Alternative/Emerging careers in shipping/maritime sector with a focus on green skills (e.g. Energy Manager, inspector for green certificates etc.)	To be informed about alternative/emerging careers in the field and raise or recalibrate your employability potential.	1 h
<i>Self-reflection activity "Exploring the impact of an environmentally conscious professional attitude to other spheres of life"</i>		1 h
Quiz Assessment		10 min
<i>Post-course survey (feedback)</i>		5 min
TOTAL TIME		5h 15 min



MODULE 4

In-between ethics and practice

LEARNING OBJECTIVES

This module aspires to help the maritime/shipping employees shape a solid approach for sustainable operation and inspire their colleagues to follow in their footsteps.

This module is valid for the Curriculum:

- Current Employees

UNIT	LEARNING OUTPUTS	DURATION
1. Personal responsibility: the impact of professionals' actions on the environment	Realizing the short-, medium- and long-term consequences of environmentally neglecting or intentionally degrading actions of professionals and design a personal plan on how to minimize them or deter others from acting like this.	1 h
2. How to train your colleagues in getting greener: Peer-to-peer training through informal/non formal activities and word-of-mouth	Engaging in peer-to-peer activities in order to motivate other professionals to perform their tasks in a greener way.	1 h
3. Team-work and Green Skills: Practical tips to act in an environmentally conscious way when performing tasks as a group	Reflecting on the dynamics of a team, inspire or persuade your colleagues in order to follow green protocols or act in a more environmentally friendly way and work jointly to minimize the risks for the environment from your professional actions.	1 h



4. Contradictions between green agendas and existing operational protocols/available technology	Understanding which are the reasons behind the inefficiencies in the implementation of green(er) protocols and how these issues could be overcome.	1 h
<i>Self-reflection activity "Between on-the-job training and lifelong learning: identifying our gaps and weaknesses in terms of green skills and drawing the line on what we can learn on our day-to-day duty and what we need additional support to"</i>		1 h
Quiz Assessment		10 min
<i>Post-course survey (feedback)</i>		5 min
TOTAL TIME		5h 15min



MODULE 4

Establishing synergies with stakeholders

LEARNING OBJECTIVES

This module explores the opportunity of opening a new inter-sectional dialogue towards environmental protection.

This module is valid for the Curriculum:

- Shipowners

UNIT	LEARNING OUTPUTS	DURATION
1. Climate change and environmental governance: how can we learn from other economic sectors or collaborate with them?	Figuring out plans or ideas on how to approach other economic sectors and jointly design a holistic intervention for environmental protection.	45 min
2. The role of maritime cluster in the promotion of sustainability and innovation in the blue economy sector	Exploring ways to create and learn how to efficiently promote topics of common interest for discussion within the maritime clusters and to raise awareness on common challenges for a sustainable blue economy.	45 min
3. The importance of lifelong learning: enhancing staff's capacity through organized training schemes	Understanding the importance of providing lifelong learning opportunities to maritime/shipping staff for the green upscaling of the whole industry.	45 min



4. Supporting innovation and research on the efficient and economic integration of new technologies in vessel operation and supporting infrastructure	//	45 min
<i>Self-reflection activity "Designing an intervention to be delivered to policymakers and other stakeholders"</i>		30 min
Quiz Assessment		10 min
<i>Post-course survey (feedback)</i>		5 min
TOTAL TIME		3h 45min

	VET INSTITUTES	CURRENT EMPLOYEES	SHIPOWNERS
FINAL ASSESSMENT OF ASYNCHRONOUS + SYNCHRONOUS LEARNING	20 h	20 h	15 h