



Maritime Alliance for fostering the
European Blue Economy through a
Marine Technology Skilling Strategy

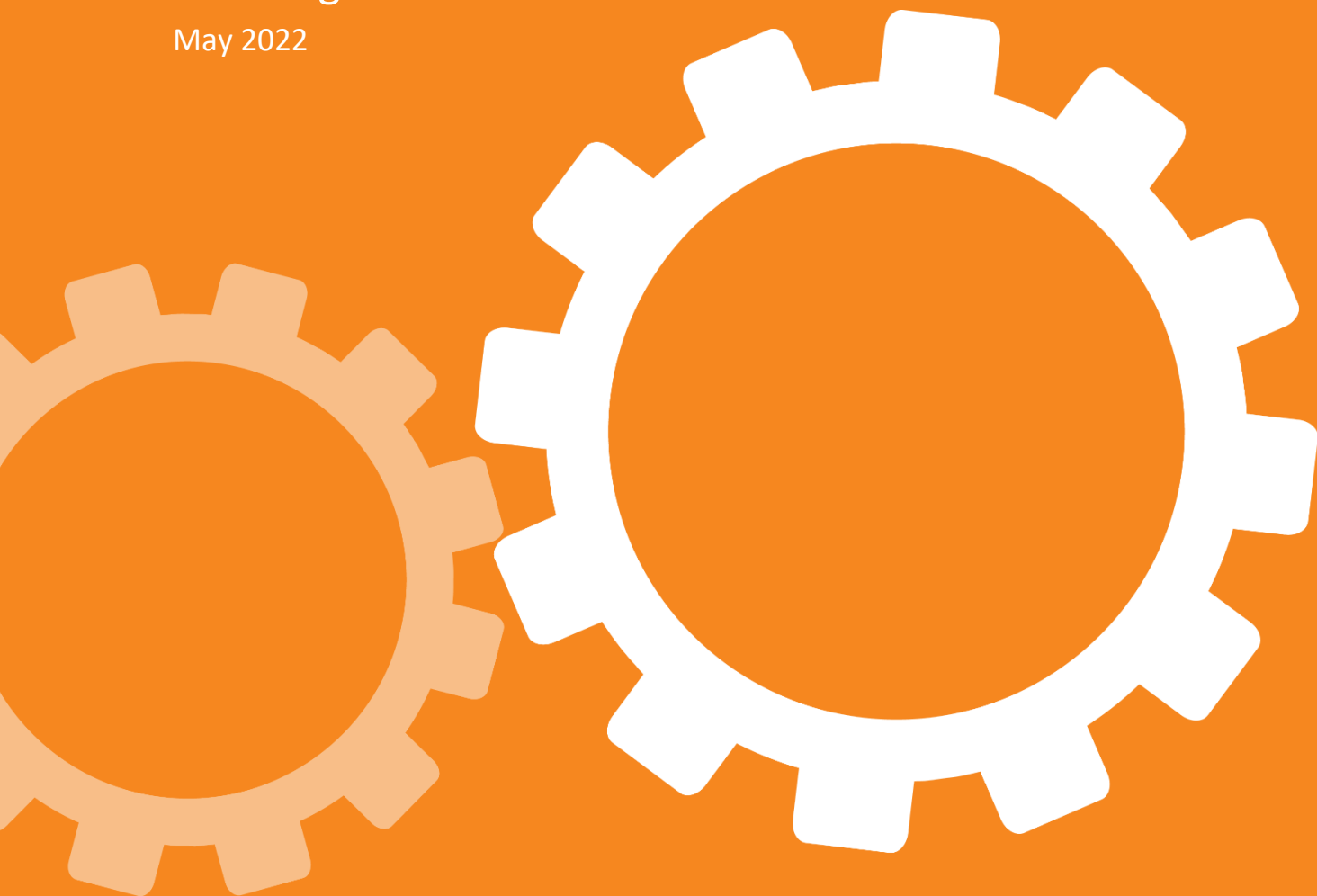


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Maritime on the Loop for Ocean Literacy (MOL2)

Learning Outcomes

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Course Title	Maritime on the Loop for Ocean Literacy (MOL2)
Course Type:	Workshop, short training courses.
Entry Level:	No prior learning required.
Level and Relevant Framework	EQF levels 3-4
Delivery Method	Lecture 40% Practical 60%

Unit 1 Management of Priorities	
Entry Level	No prior knowledge required.
Optional Supplementary Information	This introductory course shows students all the steps needed to successfully achieve their goal, the construction of a raft to compete in the Regata Solar, and how to plan these steps.
Learning Outcome 1	Planning the workload/time schedule of the team to achieve objective of completing a raft fit to compete in the Regata Solar.
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know and understand the Concept of Time Management. 2. Know and understand the consequences of bad or inadequate Time Management. 3. Understand different priorities of Priorities Management; Urgent vs. Important; Efficiency vs. Effective. 4. Analyse potential failure elements: Pre Mortem analysis: <ol style="list-style-type: none"> a. Define Milestones and Establish sequences and timelines. b. Know and understand SMART objective. c. Identify threats and problems + potential solutions. d. Identify and list resources. e. Show/develop Progress Indicators. f. Define Task Leaders and control measures.
Evidence requirements	<p>Attendance at the face-to-face workshop.</p> <p>Open-ended group discussion.</p> <p>Oral questions and answers on each aspect of Priority Management.</p> <p>Oral Presentation of Case Study: either Method no 4 (Urgent v. Important) or No 5 (Efficiency v. Effective) with pre-Mortem Analysis.</p>
Assessment method <i>Accreditation:</i> <i>EUROPASS CV; European Digital Credit System; course certificate of completion</i>	<p>Supervised group discussion.</p> <p>Oral presentation to group.</p>

Unit 2 Free CAD and 3D printing	
Entry Level	Basic digital competence (how to use a computer).
Optional Supplementary Information	Many secondary schools have 3D printers as a tool for developing students' technological skills. This course shows them that Free CAD is a complementary tool to 3D printing.
Learning Outcome 1	Ability to use basic CAD elements.
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know CAD interface. 2. Know and understand the basics of 3D pieces design. 3. Design simple 3D piece.
Evidence requirements	Attendance at the workshop. Complete the tasks required during the course <ol style="list-style-type: none"> 1. Respond to oral questions showing that the attendee has understood the instructions (ORAL). 2. Produce an adequate design for item chosen by attendee. 3. Demonstrate knowledge and skill using 3D printer to produce item corresponding to above original design.
Assessment method <i>Accreditation:</i> <i>EUROPASS CV; European Digital Credit System; course certificate of completion</i>	See Unit 1 Assessment instruments. Oral responses to questioning. Written design for chosen piece for 3D printing. Practical work – producing 3D printed item
Learning Outcome 2	3D printing knowledge
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know and understand 3D printer parameters (ultimaker Cura). 2. Learn common printing problems and how to prevent/solve them.
Evidence requirements	Attendance at the workshop.
Assessment method <i>Accreditation:</i> <i>EUROPASS CV; European Digital Credit System; course certificate of completion.</i>	Complete the exercises required during the course Identify problem from example given by lecturer, and provide solution (either oral or written).

Unit 3 Using polyester	
Entry Level	No prior knowledge required but organizational skills such as ability to follow step-by-step instructions and tidy working habits.
Optional Supplementary Information	This training provides participant with: -knowledge of how to use composites, resin-based pastes, how to apply pastes for bodywork to a model, how to create a flat part with polyester reinforced with glass fibre, how to laminate, how to repair 3D printed objects, etc.
Learning Outcome 1	Build a 3D structure using a mould.
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know and recognise differences between types of resin: Orthophthalic & Isophthalic resins. 2. Understand the importance of Catalysers. 3. Know how to make different types of pastes. 4. Distinguish different types of bodywork fillers and their peculiarities. 5. Recognise all types of tools needed. 6. Know relevant health and safety measures. 7. Be aware of environmental aspects.
Assessment method <i>Accreditation: EUROPASS CV; European Digital Credit System; course certificate of completion</i>	<p>Attendance at the course.</p> <p>Can respond correctly to any questions on all above aspects within a set time period.</p> <p>Practical /project work, demonstration of one out of five techniques</p> <p>Can answer health and safety questions orally.</p>

Unit 4 Gluing wood	
Entry Level	No prior knowledge or skills needed.
Optional Supplementary Information	This training allows participants to apply different techniques of gluing Wood, taking into consideration Health and Safety measures.
Learning Outcome 1	Principles of wood boatbuilding
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know techniques for wooden boatbuilding. 2. Know laminate systems in boatbuilding. 3. Know which materials are suitable for laminates. 4. Know which tools are needed for this process. 5. Understand steps involved in building the main structure, and for working with planks. 6. Know relevant Health and Safety measures. 7. Be aware of environmental aspects.
Evidence requirements	<p>Attendance at the workshop.</p> <p>Oral questions and answers about health and safety, knowledge of laminate systems.</p> <p>Practical /project work, demonstration of one technique as chosen by attendee (or required by lecturer).</p>
Assessment method <i>Accreditation: EUROPASS CV; European Digital Credit System; course certificate of completion</i>	<p>Oral responses.</p> <p>Practical/project work as set by lecturer or as chosen by attendee.</p>

Unit 5 Use of Bamboo	
Entry Level	No prior knowledge or skill needed.
Learning Outcome 1	Basic cutting and joining techniques for building with bamboo
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know how to use bamboo as a building material. 2. Understand that Bamboo is used globally as a sustainable material. 3. Know how the Bamboo carbon footprint compares with other building materials. 4. Learn details of the Bamboo life cycle (cost & comparison with other materials). 5. Learn how to source usable pieces and join them.
Assessment method <i>Accreditation:</i> <i>EUROPASS CV; European Digital Credit System; course certificate of completion</i>	<p>Attendance at the workshop.</p> <p>Oral questions and answers about bamboo life cycle, environmental aspects and sustainability.</p> <p>Written answer comparing COST of bamboo with two other materials OR written answer comparing environmental suitability of bamboo as compared with other types.</p> <p>Practical /project work, demonstration.</p>

Unit 6 Electronics and remote control	
Entry Level:	No prior knowledge or skills needed
Learning Outcome 1	Electronics and propulsion
Knowledge + Skills	<ol style="list-style-type: none"> 1. Recognise different types of Motors (Brushed & Brushless). 2. Learn characteristics of different types of Propellers. 3. Understand how the Testing Bench works. 4. Use the Testing Bench under supervision. 5. Learn the main characteristics of Solar panels and MPPT (Maximum Power Point Tracker). 6. Understand the importance of Algorithms, P&O, Arduino, etc.
Evidence requirements	<p>Attendance at the workshop.</p> <p>Oral questions and answers about motors, propellers, solar panels, algorithms.</p> <p>Written answer on algorithms.</p> <p>Practical /project work (Testing Bench).</p>
Assessment method <i>Accreditation:</i> <i>EUROPASS CV; European Digital Credit System; course certificate of completion</i>	Oral, written, practical/project.
Learning Outcome 2	Telemetry & Remote control
Knowledge + Skills	<ol style="list-style-type: none"> 1. Know and understand the basics of Telemetry. 2. Learn which types of parameters should be measured and which are the types of measures. 3. Know and understand the technologies used in Telemetry. 4. Learn details of radio control systems. 5. Learn details of communication protocols.

Evidence requirements	Attendance at the workshop. Oral questions and answers on basic telemetry and techniques used. Written answers on radio control systems. Written answers on communication protocols.
Assessment method <i>Accreditation: EUROPASS CV; European Digital Credit System; course certificate of completion</i>	Oral, written as above.

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