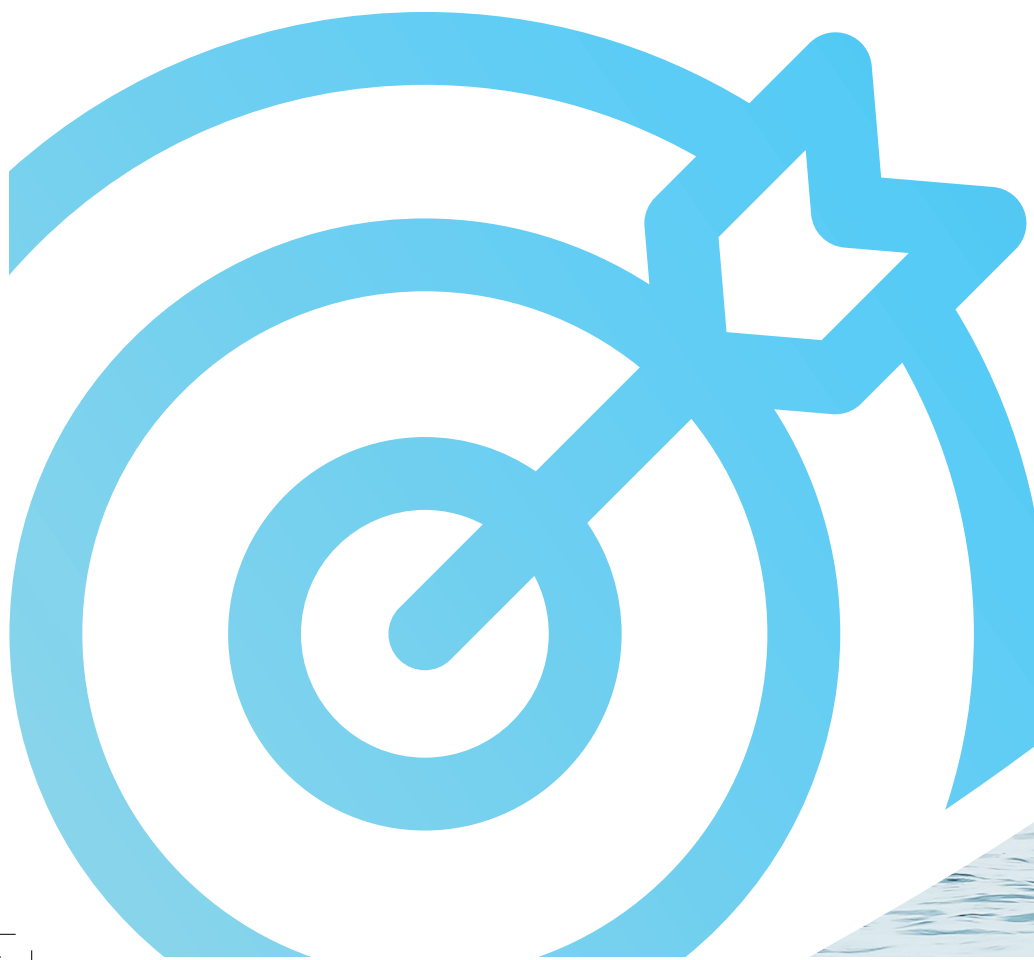
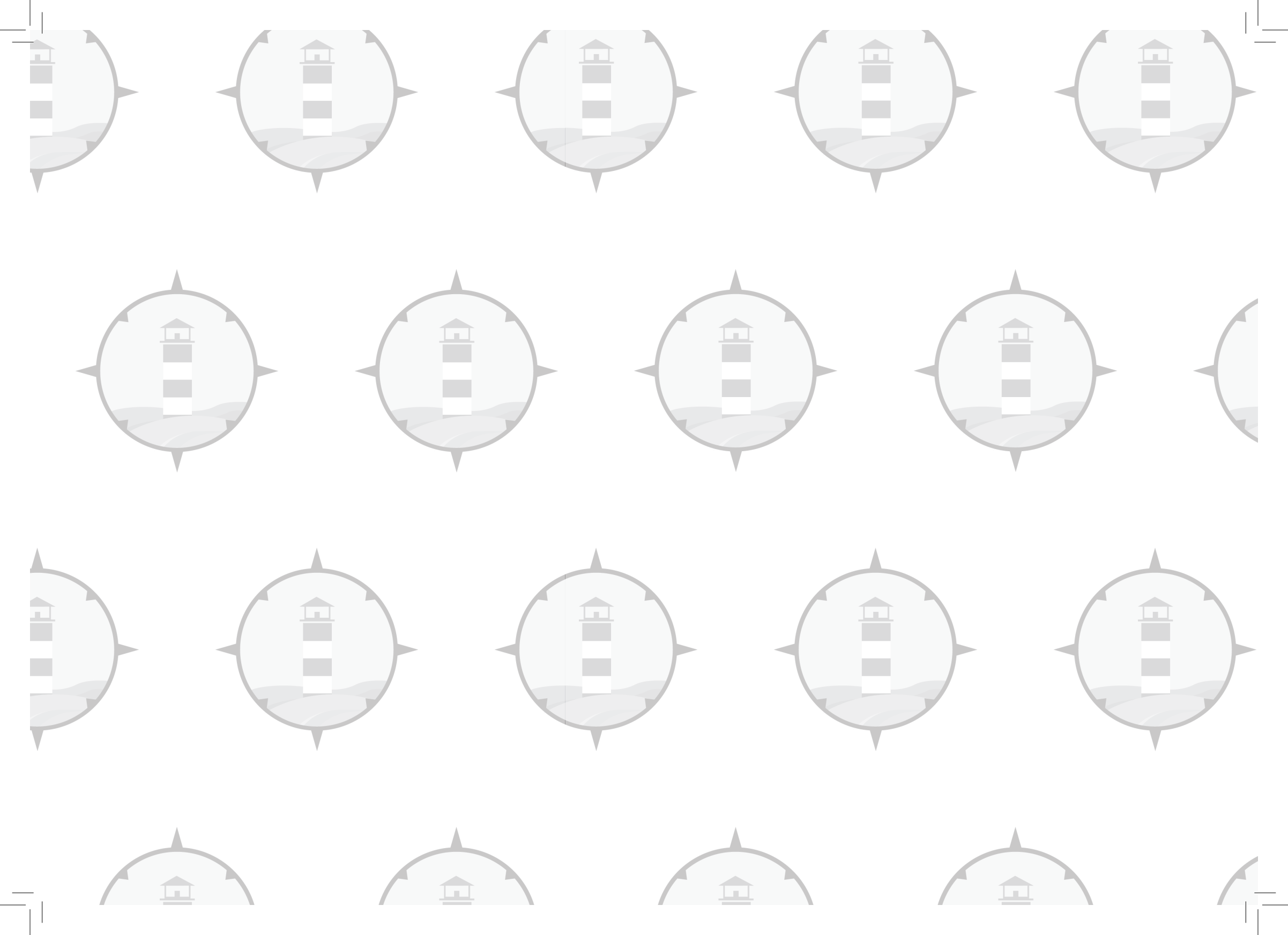


MARITIME LITERACY SYLLABUS

A PREPARATORY VET COURSE





This Teachers book was developed as part of the project 'Maritime Literacy – A preparatory VET Course', funded by the European Commission's Erasmus+ Programme and implemented through a collaboration with the following organisations:

FGU Østjylland (Denmark)

InterCollege ApS (Denmark)

Sea Teach (Spain)

Kocaeli Provincial Directorate of National Education (Turkey)

International Internships (Romania)

SEA TEACH



Course objective

To provide basic, yet holistic Maritime competence to students enrolled on various vocational education and training (VET) programmes. Thus, providing learners with a basic maritime literacy that can be taken forward into any further education or work that is related or connected to seas, oceans, coasts, and inland waterways.

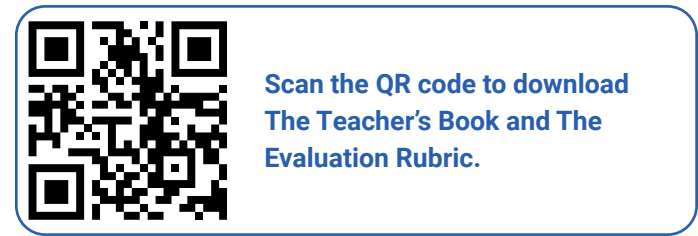
Pre-Requisite

Although this course is designed for students who are beginners to the maritime world it is assumed that the teachers have a level of knowledge and experience to explain, for example, the details of navigation and therefore be able to offer a variety of scenarios to explain the subject better to the learners.

Introduction to the Course

A 15-day (75 hours) course providing 5 thematic maritime modules:

- Seamanship 4 Days
- Communication 4 Days
- Navigation 4 Days
- Safety 2 Days
- Ecology 1 Day



Each day of the 15-day course consists of 5 hours of teaching/training.

The 15 days may be delivered consecutively or can, for example, be delivered as one day a week over 15 weeks.

Pre-Course Experience required: **None**

Course Framework and Approach:

The Course is framed around the 5 thematic modules presented above. Each Module is divided into sub-contents, which are divided furthermore into subjects/topics.

The subjects/topics are addressed through suggested teaching/training activities, which are provided in the Teacher's Book. Time is allotted to each activity in hours.

The modules, sub-contents, and subjects/topics have been presented using a matrix system that provides an overview of the course flow, lesson plans, and learning objectives.

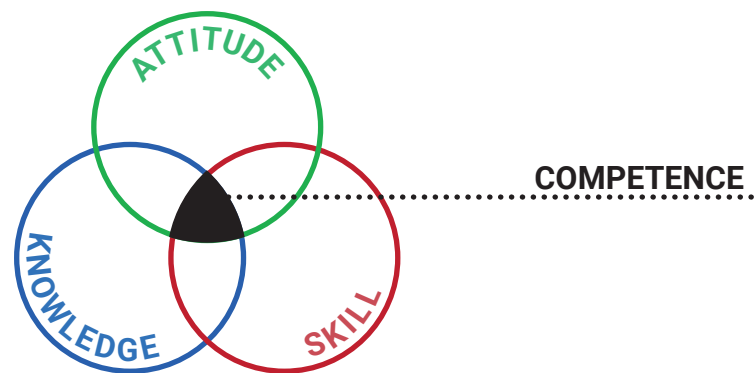
The Course has been designed to deliver a level of learning to the students based on their beginner status. The methods and activities used in this course are designed to incorporate an approach inspired by non-formal education, whereby students develop a reflective understanding of what they learn, are able to recognise links between the different learning outcomes and can independently identify practical ways in which to apply the learning. This approach is reinforced through the course by integrating guidance upon how the teacher can use de-briefing and dialogue to facilitate the students' reflection of learning.

For each module, a set of **curriculum objectives** have been identified which fulfil the overall **course objective**. Furthermore, each of the module's curriculum objectives are addressed through a series of **learning objectives** which each training/teaching activity has been designed to address.

The module curriculum objectives are based upon basic thematic competence development.

The Learning objectives of each activity are based upon the attainment of three types of learning: knowledge, skill, and attitude (KSA). The knowledge, skill and attitude acquired or improved through the training/teaching activities support the attainment of the competence based curricular objectives.

As presented in the model below, the course is based on an approach that does not prioritise between knowledge, skill and attitude, but rather recognises their inter-relation and the importance of all three in building competence.



This approach is based upon a theoretical framework for categorising educational goals that is commonly referred to as 'Bloom's Taxonomy' where learning is grouped into three categories: cognitive domain, psychomotor domain, and affective domain.

This approach has been adopted broadly across different learning spectrums, albeit under varying interpretations. The 'Cognitive domain' is consistently understood as knowledge-based learning, and 'psychomotor domain' as skill-based learning. However, the affective domain is more open for interpretation, and is regularly understood as either attitudinal learning, ability, or competence.

In the framework of this course the affective domain has been interpreted as attitudinal learning, and competence has been understood as the combined application of knowledge, skill, and attitude. The course defines and uses 'knowledge', 'skill', 'attitude', and 'competence' as follows:

Knowledge

In reference to the student's retainment and understanding of information. The course's learning objectives delineate knowledge learning into five levels that build upon each other, as follows:

1. Basic knowledge – the acquisition and retainment of basic information
2. Understanding – the reflective comprehension of the information retained
3. Application – the applied use of the of the retained information
4. Analysis – the reflective analysis and dissection of retained information
5. Synthesis – the reflective linkage and integration of different retained information

Skill

In reference to the student's ability to practically undertake an action, for example, tie a bowline knot. Within the scope of this course, students are expected to develop basic maritime related skills.

Attitude

When referring to attitude, the course is not intending to focus on 'good' or 'bad' attitude, but rather an attitudinal approach or value that the students have developed through experience, such as calmness, attentiveness, openness, flexibility. The course focuses upon attitudinal learning to encourage students to build a connection to maritime culture and values and ensure they can combine their skill and knowledge effectively in each situation.

Competence

In reference to the combined application of the acquired or developed knowledge, skill, and attitude. The course's intention is to provide the students with the possibility to acquire the needed knowledge, skill, and attitude for developing basic and holistic Maritime competence, or otherwise referred to in this course as 'Basic Maritime Literacy'.

Teaching methods:

a. Direct Instruction

A general term that refers to the traditional teaching strategy that relies on explicit teaching through the direct delivery of information and teacher-led demonstrations. In this method of instruction, the teacher might play one or all the following roles: Formal authority, expert, and personal model. The course uses direct instruction in some activities to provide a diversity of styles and meet different learning needs. As the course intends to support a non-formal, reflective approach to learning, the use of direct instruction has been reinforced either through a guidance for facilitating learning reflection or through directly following up on the activity with a second activity that utilizes a more interactive teaching method.

b. Experiential learning

A process whereby knowledge, skill, and attitude is created through the transformation of experience. The knowledge, skill, and attitude results from the combinations of grasping and transforming the experience. The learning in this model includes multiple content areas so that students can see how problem-solving can happen in the real world.

c. Flipped classroom learning approach

A teaching structure whereby students engage in self-study at home and complete in-class assignments, as opposed to receiving the information in class and executing the learning at home/outside of the class. Teachers who implement the flipped classroom model often film their own instructional videos, but many also use pre-made videos from online sources. A key benefit of the flipped classroom model is that it allows for students to work at their own pace if that is how the teacher chooses to implement it. In some cases, teachers may assign the same videos to all students, while in others, teachers may choose to allow students to watch new videos as they master topics, taking on a more “differentiated” approach.

d. Game based learning

A teaching method that comes from the desire to engage students in more active learning in the classroom. Games are a great way to encourage a “mastery” mindset, rather than a focus on grades and can support the students to be problem solvers and develop soft skills that they will need in future employment or further education. In a game-based learning environment, students work on quests to accomplish a specific goal (learning objective) by choosing actions and experimenting along the way.

e. Hands-on learning

A teaching method where students perform physical, ‘hands-on’ activities rather than listen to presentations or watch demonstrations.

f. Project-based learning

Project Based Learning is a teaching method in which students gain knowledge and skills by working together for a period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. This style of teaching encourages the student to work together to respond to a problem or question set by the teacher.

Activities

Each activity is listed by a specific number in the course framework, i.e (Activity ID 1). This number is connected to the Teacher's Book, where each activity is explained in more detail, with its description, learning objectives, materials or equipment needed as well as instructions on delivering.

Suggestions for assessment of learning

This course does not provide any certification, accreditation, or other formalised tool for recognition of learning. However, the course may be integrated into existing educational frameworks and structures that do provide means in which to offer a formal recognition of learning. In this regard, suggestions for assessment of learning are provided within the course framework that can be adapted as needed to align with institutions existing assessment frameworks and practices. **An Evaluation Rubric** is provided to offer a framework for recording and monitoring student's progress through the course.

| Value/Attitude | Actions which demonstrate students have -or have acquired the value/attitude |
|------------------------|--|
| Autonomy | <ul style="list-style-type: none"> ▶ Can work autonomously ▶ Can make decisions autonomously |
| Collaboration/teamwork | <ul style="list-style-type: none"> ▶ Help fellow students who are confronted with difficulties |
| Commitment | <ul style="list-style-type: none"> ▶ Help arrange and put away equipment ▶ Accept challenges ▶ Make every effort to accomplish learning targets |
| Critical thinking | <ul style="list-style-type: none"> ▶ Tolerant, curious, and proactive ▶ Self-confident ▶ Comfort dealing with uncertainty |
| Decision making | <ul style="list-style-type: none"> ▶ Identify problems ▶ Make decisions or choices |
| Participation in class | <ul style="list-style-type: none"> ▶ Displays consistent positive attitude ▶ Graciously accept feedback & use constructively ▶ Peer leader |
| Perseverance | <ul style="list-style-type: none"> ▶ Work hard to learn ▶ Work hard to achieve targets ▶ Insist on working hard in practice even in difficult circumstances |
| Respect for others | <ul style="list-style-type: none"> ▶ Listen carefully to others' instructions ▶ Respect and cooperate with team members. ▶ Respect the performance of fellow students |
| Responsibility | <ul style="list-style-type: none"> ▶ Join all activities punctually ▶ Put away equipment after training ▶ Be responsible to self and the team |



When assessing learning, it is strongly recommended to recognise and document the attitudinal/value-based learning that has taken place. The table here provides an overview of attitudinal/value-based learning outcomes which should be acquired and developed throughout the course.

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MODULE 1. SEAMANSHIP

Duration: 20 hours (4 days x 5hrs)

1.1. Curricular Objectives

- a. To provide learners with a historical background of how sea-going vessels developed as a method of transport for various activities.
- b. To ensure learners understand some of the Meteorological effects on the sea.
- c. To ensure learners recognise the main activities carried out on the water and the various sectors engaged in those activities.
- d. To ensure learners have knowledge of, and can demonstrate, a selection of Nautical Knots.
- e. To ensure learners recognise different boat types and how are they maintained and propelled.

1.2. Starting Point

Module approach

This module will provide a foundation upon which the other modules further build on. At the outset of the Module, the teacher should provide a short overview of the course and elaborate on what the students are going to learn during this first Module.

Students' current knowledge

As part of the first steps into the course the teacher should test the existing knowledge of their students by facilitating a brainstorm when new topics are introduced. Though the brainstorms the students should be encouraged to reflect, recall, and share their current understanding of the topic.

Foreseeing of difficulties

It is expected that students are completely new to the subject meaning that they might struggle with some of the content. Some students may have a low level of English language knowledge and digital Skills. For this reason, teachers should make use of the different methods and techniques listed and invest more time in those students who are facing challenges in acquiring the expected learning outcomes.

1.3. Framework

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------|-------------------------|--|--|--|-------------------------------|---|---|--|------------|
| DAY 1 | | | | | | | | | |
| 1. SEAMANSHIP | A) History of Seafaring | A.1.Exploration A.2.Invasion A.3.War A.4.Trade A.5.Pleasure | <i>Direct Instruction</i> History of Seafaring – Teacher led presentation & timeline exercise on history of seafaring. (Activity ID 1) | <i>Game based learning</i> History of Seafaring – Online games to identify types of vessels according to different periods in History. (Activity ID 2) | Knowledge & Attitude | Applied knowledge of how seafaring activity developed through the ages. Applied knowledge of how different types of vessels developed according to their use and purpose. Applied knowledge of the terms/names for basic parts of different vessels. Recognition of the importance of understanding the history of seafaring. | Assess the student's ability to apply the knowledge when creating their timelines and online games. Use the discussion at the end of activity 2 to assess the students' reflections upon the importance and relevance of the gained knowledge. | Projector & laptop Maps, Globe, Atlas and Reference books. Computers or mobile devices with access to the internet | 2,5 hrs |
| | B) Reading the Sea | B.1. Weather maps & Forecasting B.2. Beaufort scale & the effect of the wind on water | <i>Direct Instruction</i> Reading the Sea – Basic meteorological forecasting and weather map reading activity. (Activity ID 3) | <i>Experiential learning</i> Reading the Sea – Visit the coast to experience the effects of the wind on the sea state. (Activity ID 4) | Knowledge, skill and attitude | Appreciation of the importance of understanding the weather, particularly the wind and the effects and dangers of storms. Applied knowledge and skill to be able find and interpret a weather forecast. Basic knowledge of map reading. Basic knowledge to understand low pressure and high pressure. Basic knowledge to understand the Beaufort scale and the effects of wind on water. Knowledge and skill to be able to describe wind differences, wind directions. Understand the effects and dangers of storms. Basic knowledge of wave types and skill to be able to describe basic wave types. | Test students on the Beaufort Scale and weather terminology. Engage the students in dialogue to determine their level of knowledge and attitude regarding the effects and dangers of the weather. | Smart phones or tablets to access weather map applications Reference books Projector & Laptop Printouts of the Beaufort scale Printouts of wind speed and wind direction Notepad & pens | 2,5 hrs |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------|--|-----------------------------|---|---|-------------------------------|---|--|--|------------|
| DAY 2 | | | | | | | | | |
| 1. SEAMANSHIP | C) Sectors and activities related to water | C.1.Trade | <i>Direct Instruction</i> Sectors and activities related to water – Student led presentations to show different types of ships. (Activity ID 5) | <i>Game based learning</i> Sectors and activities related to water – Simulator game to determine the rules, regulations, and relationships between different vessels. (Activity ID 6) | Knowledge | Reflective knowledge of the maritime sector and what job opportunities there are within the sector. Applied knowledge of different types of ships and their relationship and priority to each other. | Assess whether students can recognise when tested the different activities from images of vessels. | Reference books. Computers/laptops with internet access (at least one per two students). | 2,5 hrs |
| | | C.2.Military | | | | | | | |
| | | C.3.Fishing Vessels | | | | | | | |
| | | C.4. Pleasure | | | | | | | |
| | | C.1.Trade | | | | | | | |
| | D) Knots | D.1 Reef Knot | <i>Flipped Classroom Learning</i> Knots – Student led presentations to teach their fellow students different knots. (Activity ID 7) | - | Knowledge, skill and attitude | Reflective knowledge of the names and uses of four different knots. Applied Knowledge and skill to tie four different knots. Sense of responsibility, leadership & teamwork. | Assess whether students can demonstrate the knots in different situation blindfolded. Assess whether students can recall which knot is for which purpose. | Computers/laptops/ tablets Ropes of different diameter, texture, and length. Handouts/diagrams/ video instructions for 4 – 8 different knots | 2,5 hrs |
| | | D.2 Bowline | | | | | | | |
| | | D.3 Clove hitch | | | | | | | |
| | | D.4 Clove hitch around rope | | | | | | | |
| | | D.5 Figure of 8 Knot | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------|-------------------------------------|-----------------------------|---|--|--------------------------------|---|---|--|------------|
| 1. SEAMANSHIP | DAY 3 | | | | | | | | |
| | E) Types of boats and vessels | E.1.Sail | <i>Direct instruction & Game based learning</i> Types of boats and vessels – Online games to identify different examples of each boat category. (Activity ID 8) | <i>Direct instruction & Experiential learning</i> Types of boats and vessels – Visit to the local port/ marina to identify different examples of each vessel category. (Activity ID 9) | Knowledge and skill | Applied knowledge and skill to identify the various types of vessels. Applied knowledge and skill to identify the parts of the boat and the names of the main vessel parts. Deepened knowledge of the official categories of vessels. Improved observational skills. | Use images to test the student's ability to recall the categories vessels and the main features of different boats. | Computers/laptops/tablets with internet-access Prepared handouts or slides to support in explaining the official differences between vessels. Notepads&Pens/ Pencils/Phones/ Cameras/Tablets | 2,5 hrs |
| | | E.2.Power Driven | | | | | | | |
| | | E.3. Terminology-boat parts | | | | | | | |
| | F) Maintenance of boats and Vessels | F.1. Basic Engine Checks | <i>Experiential learning</i> Maintenance of boats and Vessels – Visit to a shipyard or marina workshop to see how boat maintenance is done first-hand. (Activity ID 10) | <i>Game Based Learning</i> Maintenance of boats and Vessels – Finalise the structure and content of the boar category games developed in the morning activity. (Activity ID 11) | Knowledge, skill, and attitude | Basic knowledge of general boat maintenance. Basic knowledge of boat engines including the control on the fuel system, electricity, cooling, and lubricating oil system. Knowledge, skill, and attitude to recognise good seamanship in connection with maintenance / inspection of a boat. Applied knowledge and skill to observe and identify various types of vessels. Applied knowledge and skill to observe and identify the parts of the boat. Strengthened digital skills. Strengthened teamwork skills. | Test the student's ability to recall and operationalise basic maintenance procedures. | Notepads & Pens Computers/ laptops Tablets/Mobile phones/ Scanner | 2,5 hrs |
| | | F.2. Anti-fouling | | | | | | | |
| F.3. General Repairs | | | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------|---------------------------------------|---|--|--------------------------------|----------------------|--|---|--|------------|
| DAY 4 | | | | | | | | | |
| 1. SEAMANSHIP | G) Understanding of Engines and Sails | G.1. Principles of power-driven vessels | <i>Project based learning</i> Understanding of Engines and Sails – Student led research projects to determine type and principles of power and sailing vessels. (Activity ID 12) | | Knowledge and skill. | Knowledge of the different types of power and sailing vessels. Knowledge for understanding the advantages and disadvantages of the two different types of vessels. Strengthened teamwork skills. Strengthened communication skills. | Use images or videos to test the student's ability to recognise the type of vessel: sail or power | Reference books. Computers Projector | 5 hrs |
| | | G.2. Principles of wind-driven vessels | | | | | | | |

MODULE 2. COMMUNICATION ON WATER

Duration: 20 hours (4 days x 5hrs)

2.1. Curricular Objectives

- a. To ensure learners understand the basics of marine VHF radio and know what to do, what to say and what not to say. And most important, how to call for help.
- b. To ensure learners understand the basics of marine VHF radio and know what to do, what to say and what not to say. And most important, how to call for help.
- c. To provide learners with first-hand experience of observing signals at a local port or coastal site.

2.2. Starting Point

Module approach

Through this Module, the students will learn how to communicate by using marine VHF radio online simulators. They will furthermore be able to identify and recognise different signs, lights, sound signals and flags that are used on water to communicate to other vessels. The teaching methods used for this module will be a combination of traditional teaching in class, hands-on approach, and experimental training group through a visit to a local port or coastal area the knowledge gained in class. In this visit students will be asked to collect litter found on the beach or proof of any kind of action that is not environmentally friendly.

Students' current knowledge

The module will start on day 5, meaning that students will have already acquired basic knowledge of Seamanship and can be introduced into more complex and practical lessons.

Foreseeing of difficulties

Some difficulties may arise while teaching this module. Online simulators will be used to motivate students with practical lessons. Some of these students may not be used to use digital tools, meaning that teacher will have to save time to explain the use of these tools (how to use them and take care of the tool). Furthermore, it is very important to plan the study visit in order to keep them engaged in the subject they are learning and therefore avoid possible distractions.

2.3. Framework

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------------------|------------------------------------|---|--|---|--------------------------------|--|--|---|------------|
| DAY 5 | | | | | | | | | |
| 2. COMMUNICATION ON WATER | A) Introduction to radio etiquette | A.1. Basics of the VHF Radio | <i>Direct instruction</i> Introduction to radio etiquette – Teacher led presentation of communication at sea. (Activity ID 13) | <i>Hands-on learning</i> Introduction to radio etiquette – Online simulator – Radio communication. (Activity ID 14) | Knowledge and skill | Knowledge to understand how to communicate at sea and what means of communication to use. Applied knowledge and skill to describe how a VHF radio works, including making a DSC call. Applied knowledge and skill to use the phonetic alphabet to spell and use the right pro-words. | Test the student's ability to recall the phonetic alphabet and procedure words | Projector & Laptop Printed learning materials including handouts with prowords & handouts with signal exercises. Reference books Mobile devices (smartphones or tablets) | 2,5 hrs |
| | | A.2. Phonetic Alphabet | | | | | | | |
| | | A.3. Dos and Don'ts | | | | | | | |
| | | A.4. Procedural words | | | | | | | |
| | | A.5. Emergency distress call | | | | | | | |
| | B) Morse Code | B.1 Discontinued method of communication (except SOS) | <i>Direct instruction</i> Morse Code - Teacher led presentation to introduce Morse Code. (Activity ID 15) | <i>Hands-on learning</i> Morse Code - Online Morse Code simulator. (Activity ID 16) | Knowledge, skill, and attitude | Basic knowledge of Morse code. Appreciation of the historical importance of Morse code Knowledge of how Morse code sounds. Basic skills in Morse code, including how to formulate Morse code and how to translate it alphabetically. Applied knowledge and skill to make an SOS message in Morse Code. | Test the student's ability to make an SOS using Morse Code | Projector & Laptop Mobile devices (smartphones or tablets) Handouts of the alphabet in Morse Code | 2,5 hrs |
| B.2. The history of Morse Code | | | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------------------|--------------------------|--------------------|--|---|---------------------|---|---|--|------------|
| DAY 6 | | | | | | | | | |
| 2. COMMUNICATION ON WATER | C) Signs, Sounds & Flags | C.1. Buoyage | <i>Direct instruction</i> Signs, Sounds & Flags – Teacher led presentation of signs, sounds, and flags. (Activity ID 17) | <i>Game based learning</i> Signs, Sounds & Flags – Competition with flip cards (Activity ID 18) | Knowledge and skill | <p>Applied knowledge and skill to recognise and understand the significance and meaning of the signs.</p> <p>Applied knowledge and skill to recognise and understand the meaning of sound signals.</p> <p>Applied knowledge and skill to recognise and understand the meaning of flags.</p> <p>Applied knowledge and skill to recognise and understand the meaning of buoyage and day shapes.</p> | Assess the student's knowledge and skill through multiple choice questions. | <p>Projector & laptop</p> <p>Reference books and printed graphics or mobile application that shows signs and flags</p> <p>Audio device to simulate sound communication (vessel horn).</p> <p>Lightbulbs/lamps of different colours</p> <p>Blinds/blankets to make the room dark</p> <p>Flip cards displaying the buoys, day shapes, sounds signal and flags</p> <p>Stopwatch/timer</p> | 5 hrs |
| | | C.2. Signal Flags | | | | | | | |
| | | C.2. Sound Signals | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|----------------------------------|---|--|---|--|---|---|--|--|------------|
| 2. COMMUNICATION ON WATER | DAY 7 | | | | | | | | |
| | D) Lights | D.1. Navigation lights on ships | <i>Direct instruction</i> Lights - Teacher led presentation about navigation and chartered lights. (Activity ID 19) | <i>Game based learning</i> Lights - Navigation Lights – consolidating the learning through games. (Activity ID 20) | Knowledge, skill, and attitude | <p>Applied knowledge and skill to identify and understand the significance and meaning of navigation lights for various types of vessels.</p> <p>Applied knowledge and skill to identify and understand the various types of lights used by vessels to safely navigate in or out of port by night.</p> <p>Applied knowledge and skill to differentiate between two groups of lights (navigation lights and chartered lights).</p> <p>Skill and attitude to work, and make decisions, in a team.</p> <p>Skill and attitude to work, and make decisions, individually.</p> <p>Strengthened IT skills.</p> | Assess the student's retention through a multi-choice visual test of night scenarios | Projector and Laptop Video/photograph examples to show different navigation lights as seen by night Computers/laptops/tablets for each student with internet access Flip cards of light signals Reference books Navigation chart showing a port or a marina | 5 hrs |
| | | D.2. Chartered lights and light-houses | | | | | | | |
| DAY 8 | | | | | | | | | |
| E) Visit to port/marina | E.1. Observe first-hand all of the above in this module | <i>Experiential learning</i> Visit to port/marina – Visit to a local port, marina or lighthouse for recognition and comparison in a real sense. (Activity ID 21) | - | Knowledge and skill | <p>Applied knowledge and skill to recognise various marks, flags, and lights.</p> <p>Knowledge of the actual size and dimensions of various buoys, lights, and flags.</p> | Assess the student's understanding through an extended dialogue at the end of the activity | Notepads & pens Cameras Handouts showing different marks, flags and lights | 5 hrs | |

MODULE 3: NAVIGATION ON WATER

Duration: 20 hours (4 days x 5hrs)

3.1. Curricular Objectives

- a. To ensure learners have a basic understanding of navigation on water.
- b. To ensure learners know how to use the tools of Navigation.
- c. To ensure learners know how to read a nautical chart and plan a simple passage.
- d. To ensure learners know the basic rules to avoid a collision at sea.

3.2. Starting Point

Module approach

This Module will provide a short introduction to offer the definition of Navigation will be given. As this module requires a higher practical approach, the teaching is divided between activities dedicated to theory and traditional teaching and more hands-on activities that promote collaborative working and mutual learning co-operation. Students will learn how to use the tools of Navigation, read nautical charts, plan a simple passage and to understand the rules to avoid collisions at sea.

Students' current knowledge

The students will be familiarised with the maritime sector, after completing 8 days of study, practical lessons, and study visits. Students will be ready to make use of more complex tools such as compasses and plan simple passages.

Foreseeing of difficulties

Tools such as the Plotter, dividers and compasses will be introduced to students during the Module. Some of these tools will be completely new to students and will require time investment to explain them at different levels. As on module 2, special attention should be given to the use of digital tools (simulators).

3.3. Framework

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|-------------------------------|-------------------------------|---|--|---|-------------------------------|--|--|--|------------|
| DAY 9 | | | | | | | | | |
| 3. NAVIGATION ON WATER | A) Introduction to navigation | A.1. History of Navigation | <i>Direct instruction</i> Introduction to navigation - Teacher led presentation on the history of Navigation and the influence of the tide on navigation. (Activity ID 22) | <i>Project based learning</i> Introduction to navigation - Student research of online videos showing tidal rise and fall and tidal stream effects. (Activity ID 23) | Knowledge and attitude | Basic knowledge of the fundamental differences of navigating in tidal or non-tidal waters. Knowledge and appreciation of the effects and dangers of tidal waters. | Use the extended discussion at the end of activity 23 to assess the student's understanding and appreciation of the effects and dangers of tidal waters. | Projector & Laptop Reference books Computers or mobile devices with internet access | 2,5 hrs |
| | | A.2. Tidal waters | | | | | | | |
| | | A.3. Non-tidal waters | | | | | | | |
| | B) The chart | B.1. Chart information | <i>Direct instruction & Project based learning</i> The chart – Teacher led presentation and group assignment using nautical charts. (Activity ID 24) | - | Knowledge, skill and attitude | Applied knowledge of chart scale features and colour coding. Applied knowledge and skill in using the plotter, the dividers, and the compass. Knowledge of lake demarcations. Applied knowledge and skill to read a chart. Applied knowledge and skill to plan a simple passage. Recognition of the importance of precision in chartwork and the consequences of unprecise chartwork. | Use the extended discussion at the end of the activity to assess the student's understanding of the steps for planning a passage | Notepad and pencils Plotter, Dividers Calculators Compass' Reference books Nautical charts | 2,5 hrs |
| | | B.2. Position of Latitude and longitude | | | | | | | |
| | | B.3. Distance | | | | | | | |
| | | B.4. Compass Bearing | | | | | | | |
| | | B.5. Passage planning | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|-----------------------------------|---|---|---|--------------------------------|---|---|---|---|------------|
| 3. NAVIGATION ON WATER | DAY 10 | | | | | | | | |
| | C) The chart work/passage planning practice | C.1. Plotting the course | <i>Hands-on learning & Project based learning</i> The chart - Students work in groups, with teacher support, to create a passage plan. (Activity ID 25) | - | Knowledge, skill, and attitude | Applied knowledge and skill to draw up a simple passage plan. Skill and attitude to work autonomously. Skill and attitude to work with others to solve problems and find solutions. | Use the students' presentations in the afternoon session to assess their level of learning | Notepad and pencils Plotter Dividers Calculators Compass Reference books Nautical charts | 5 hrs |
| | DAY 11 | | | | | | | | |
| | D) Collision regulations | D.1. Introduction to regulations | <i>Flipped classroom learning approach</i> Collision regulations - Students learn the collision regulations through self-study and then teach their peers. (Activity ID 26) | - | Knowledge, skill, and attitude | Knowledge of which vessel gives way in different collision scenarios. Skill and attitude to autonomously research and source learning materials. Skills to communicate and present information in a structured and clear way. | Use the students' presentations in the afternoon session to assess their level of learning. | Projector & Laptop Reference books Computers or mobile devices with internet access Collision reports & videos of collisions | 5 hrs |
| | | D.2. Examples of collisions | | | | | | | |
| D.3. Giveaway rules | | | | | | | | | |
| D.4. Local rules | | | | | | | | | |
| DAY 12 | | | | | | | | | |
| E) Collision regulations practice | E.1. Collision simulator | <i>Game based learning</i> Collision regulations practice - Students work through online simulations of collision scenarios. (Activity ID 27) | - | Knowledge, skill, and attitude | Knowledge of real-life collision situations. Skill and attitude to put knowledge into practice in collision situations. Skill and attitude to autonomously make decisions in collision scenarios. Strengthened digital skills. | - | Computers or mobile devices with internet access for each student | 5 hrs | |

MODULE 4: SAFETY ON WATER

Duration: 10 hours (2 days x 5hrs)

4.1. Curricular Objectives

- a. To ensure learners understand the importance of, and can use, essential safety equipment
- b. To ensure learners understand what to do in specific emergency situations
- c. To ensure learners have knowledge of basic first aid
- d. To explain to learners the treatment options for the most common medical emergencies

4.2. Starting Point

Module approach

As the contents of this module requires learning by doing, a combination of hands-on approach, experimental training, group work and peer activities will be used. The module involves a visit to local sea safety centre/sea rescue service to get specialist professional teaching. Students will understand the importance of the need to have knowledge of, and to use, essential safety equipment and what to do in specific emergency situations.

Students' current knowledge

After receiving 12 days of training in the maritime subject, students will have knowledge of Seamanship, Communication and Navigation on water, meaning that they will have learned the basics on how to navigate and communicate with other vessels or land and therefore can take the next step of learning what to do in emergency situations.

Foreseeing of difficulties

This is a subject that involves the treatment or assistance to a person suffering from either a minor or serious illness or injury. It is important to remark the importance of this module and to act with responsibility.

4.3. Framework

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|---------------------------|----------------------------------|-----------------------------------|--|---|--------------------------------|--|--|--|------------|
| DAY 13 | | | | | | | | | |
| 4. SAFETY ON WATER | A) Understanding safety on water | A.1. Safety equipment | <i>Direct instruction</i> Understanding safety on water – Teacher led introduction presentation of safety at sea. (Activity ID 28) | <i>Direct instruction</i> Understanding safety on water – Session with a professional instructor to demonstrate and teach the important basics of medical first aid. (Activity ID 29) | Knowledge, skill, and attitude | Appreciation of the importance knowing of and being able to use essential safety equipment. Basic knowledge of which safety equipment is used in which emergency. Knowledge of basic medical first aid, including the recognition and procedure to deal with hypothermia, frostbite, and undercooling. Knowledge of treatment and care options. Skill and attitude for decision making and teamwork. | During the professional instructor presentations, use the opportunity to observe and evaluate the students understanding, attitude and progress. | Projector & Laptop Medical first aid kit Dummy fire extinguishers and flares. Life jackets | 2,5 hrs |
| | | A.2. Safety rules | | | | | | | |
| | | A.3. Medical First Aid | | | | | | | |
| | B) Handling different scenarios | B.1 Using safety equipment | <i>Hands-on learning</i> Handling different scenarios – Practical demonstration and testing among students of various essential safety equipment. (Activity ID 30) | – | Knowledge, skill, and attitude | Skill and knowledge to use and demonstrate essential safety equipment. Knowledge of the procedures for basic medical first aid. Knowledge of the contents of the basic medical first aid kit. | Asses the students learning through a simple quiz of what equipment to use in which emergency scenario | Medical first aid kit Dummy fire extinguishers and flares. Life jackets First Aid Mannequin Print outs for at least 4 'skill stations' | 2,5 hrs |
| | | B.2 Procedures of basic first aid | | | | | | | |
| | | B.3 Using a First aid kit | | | | | | | |

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|---------------------------|-------------------------|-------------------|---|---|--------------------------------|--|---|---|------------|
| DAY 14 | | | | | | | | | |
| 4. SAFETY ON WATER | | | | | | | | | |
| | B) Emergency situations | B.1 Man overboard | <p><i>Direct instruction</i></p> <p>Emergency situations – Teacher led presentation, in cooperation with a professional safety officer, to introduce and provide examples on how to deal with emergency situations.</p> <p>(Activity ID 31)</p> | <p><i>Experiential learning</i></p> <p>Emergency situations – Visit to a local pool to experience sea survival and rescue training.</p> <p>(Activity ID 32)</p> | Knowledge, skill, and attitude | <p>Knowledge of the dangers and causes of emergency situations.</p> <p>Knowledge of the procedures to deal with emergency situations.</p> <p>Applied knowledge and skill to take part in a sea survival emergency rescue situation.</p> <p>Appreciation of the risks and importance of behaviour onboard a vessel.</p> | <p>Use the discussions at the end of activity 32 to assess the student's understanding of emergency situations.</p> | <p>Flip cards to demonstrate precautions to prevent emergency situations.</p> <p>Video examples of emergency situations.</p> <p>Safety equipment: provided by the pool/sea survival centre.</p> | 5 hrs |

MODULE 5: ECOLOGY (SEAS, OCEANS, COASTS, AND INLAND WATERWAYS)

Duration: 5 hrs (1-day x 5hrs)

5.1. Curricular Objectives

- a. To ensure learners recognise the importance of the coastal environmental
- b. To ensure learners are aware of the serious impact of the effects of pollution to the marine environment.

5.2. Starting Point

Module approach

This final module will use a combination of direct instruction and project-based learning to develop students understanding of the impact of the maritime sector on the environment and support the student's reflection on global issues in connection to marine and coastal environments. Students will build a campaign to include other schools in the area regarding a beach clean/ protected area based on a research project.

Students' current knowledge

This is the last day of the Maritime Literacy course, and students will have gained knowledge in the most common maritime activities, including navigation, communication, and emergency situations. In this last day of the course, the students will learn how the maritime activity can damage the environment and how to act with responsibility towards it.

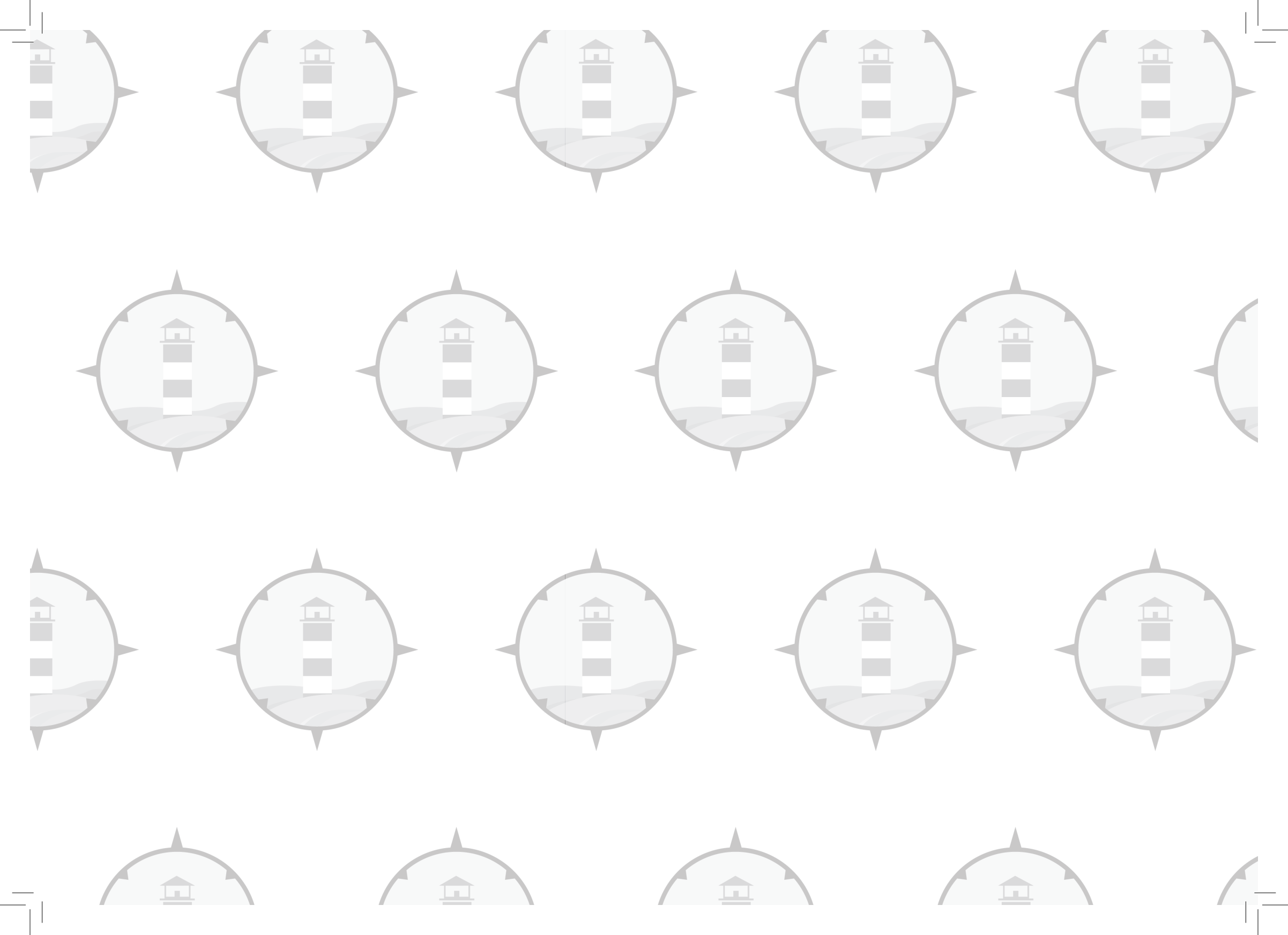
Foreseeing of difficulties

No difficulties are envisaged for this module.

5.3. Framework

| Module | Content | Subject/Topics | Method&Activity Description 1. | Method&Activity Description 2. | Type of Learning | Learning Objectives: | Suggestions for Assessment of learning | Materials | Time (hrs) |
|--|--|------------------------------------|--|--|--------------------------------|--|--|--|------------|
| 5. ECOLOGY | A) Ecological environment related to water and the effects of maritime activity on the environment | DAY 15 | | | | | | | |
| | | A.1 Noise Pollution | <i>Direct instruction</i> Effects of maritime activity on the environment – Teacher led presentation to introduce the ecological environment related to water, and the ecological effects of maritime activities. (Activity ID 33) | <i>Project based learning</i> Effects of maritime activity on the environment – Student led project to undertake research and build a campaign to promote a beach clean-up. (Activity ID 34) | Knowledge, skill, and attitude | Basic knowledge and appreciation of the impact of pollution on the sea and land-based environment. Basic knowledge of how maritime activity can affect the environment: Dangerous chemicals onboard, organic waste, litter, noise, anchoring, pollution. Knowledge and awareness of the importance of the coastal environmental and how it can be protected. Sense of responsibility for advocating for and acting upon environmental protection and environmental responsibility in the maritime sector. Strengthened teamwork and organisational skills. | Use the discussions at the end of each activity to assess the student’s understanding of the topics. | Laptop & projector Reference books Computers or mobile devices with internet access Printer | 5 hrs |
| | | A.2 Dangerous chemicals onboard | | | | | | | |
| | | A.3 organic waste | | | | | | | |
| | | A.4 Pollution, plastic, and Litter | | | | | | | |
| A.3 Sustainable Development Goal 14 – Life Below Water | | | | | | | | | |





THE EDUCATIONAL OBJECTIVE



To provide basic, yet holistic Maritime competence to students enrolled on various vocational education and training (VET) programmes. Thus, providing learners with a basic maritime literacy that can be taken forward into any further education or work that is related or connected to seas, oceans, coasts, and inland waterways.

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