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COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	24 October 2024
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2024) 250 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Union submission to the International Maritime Organization's 11th session of the Sub-Committee on Human Element, Training and Watchkeeping **proposing the introduction of a standard template for IMO Model Courses**

Delegations will find attached document SWD(2024) 250 final.

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Brussels, 23.10.2024
SWD(2024) 250 final

COMMISSION STAFF WORKING DOCUMENT

Union submission to the International Maritime Organization's 11th session of the Sub-Committee on Human Element, Training and Watchkeeping proposing the introduction of a standard template for IMO Model Courses

Union submission to the International Maritime Organization's 11th session of the Sub-Committee on Human Element, Training and Watchkeeping proposing the introduction of a standard template for IMO Model Courses

PURPOSE

This Staff Working Document contains a draft Union submission to the International Maritime Organization's (IMO) 11th session of the Sub-Committee on Human Element, Training and Watchkeeping (HTW 11). The IMO has indicatively scheduled HTW 11 from 10 to 14 February 2025.

The draft submission provides a proposal to introduce a standard template to be used in drafting IMO Model Courses and to update the associated appendix I "Implementation of IMO courses".

EU COMPETENCE

The training and certification of seafarers is regulated at international level by the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW Convention) of the International Maritime Organization (IMO), which was subject to a major revision at a Conference of Parties to the STCW Convention held in Manila in 2010 (Manila amendments). Further amendments to the STCW Convention were adopted in 2015 and in 2016.

Directive (EU) 2022/993[1] on the minimum level of training of seafarers incorporates the STCW Convention into Union law. It requires Member States to ensure that seafarers are trained as a minimum in accordance with the requirements of the STCW Convention as laid down in Annex I to the Directive (Article 3 of Directive (EU) 2022/993), including, where appropriate, the applicable provisions of the STCW Code (Article 1(21) of Directive (EU) 2022/993). According to paragraph 1 of Chapter 1 of Annex I to Directive (EU) 2022/993, the regulations prescribing the mandatory minimum requirements for certification of seafarers, including requirements for approved education and training referred to in that Annex, are supplemented by the mandatory provisions contained in Part A of the STCW Code. According to paragraph 6 of Section A-I/2 of the STCW Code, in approving training courses and programmes, Parties should take into account that the relevant IMO Model Courses can assist in the preparation of such courses and programmes and ensure that the detailed learning objectives recommended are suitably covered.

In light of all of the above, the present draft Union submission falls under EU exclusive competence, pursuant to article 3(2) TFEU as the review of the STCW Convention and Code, which, once finalised and related amendments are adopted, risks affecting or altering Union legislation and in particular Directive (EU) 2022/993.[2] This Staff Working Document is presented to establish an EU position on the matter and to transmit the document to the IMO prior to the required deadline of 8 November 2024.

[1] OJ L 169, 27.6.2022, p. 45.

[2] An EU position under Article 218(9) TFEU is to be established in due time should the IMO Maritime Safety Committee eventually be called upon to adopt an act having legal effects as regards the subject matter of the said draft Union submission. The concept of '*acts having legal effects*' includes acts that have legal effects by virtue of the rules of international law governing the body in question. It also includes instruments that do not have a binding effect under international law, but that are '*capable of decisively influencing the content of the legislation adopted by the EU legislature*' (Case C-399/12 Germany v Council (OIV), ECLI:EU:C:2014:2258, paragraphs 61-64). The present submission, however, does not produce legal effects and thus the procedure for Article 218(9) TFEU is not applied.

SUB-COMMITTEE ON HUMAN ELEMENT,
TRAINING AND WATCHKEEPING
11th session
Agenda item 3

HTW 11/3/x
Document date [to be inserted]
Language: ENGLISH
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VALIDATED MODEL TRAINING COURSES

Proposal for the introduction of a standard template for IMO Model Courses

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission, acting jointly in the interest of the European Union

SUMMARY

Executive summary:	This document provides a proposal to introduce a standard template to be used in drafting IMO Model Courses and to update the associated appendix I "Implementation of IMO courses".
Strategic direction, if applicable:	6
Output:	6.2
Action to be taken:	Paragraph 8
Related documents:	MSC-MEPC.2/Circ.15/Rev.2

Introduction

1 The development and revision of IMO Model Courses is an ongoing process. The goal is to enhance the quality and to update the Model Courses in order to assist maritime training institutes and colleges to develop and update their course programs

Background

2 The *Guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15/Rev.2) through paragraph 3 *Model course structure* of Appendix 3 gives guidance on the content of the different parts of the IMO Model Courses. However the description in paragraph 3 is general in nature and leaves room for interpretation.

3 In the process of drafting and revising the IMO Model Courses it is noted that there is considerable variation in the way the different parts are drafted. This creates additional work during the review process to align the structure and content of the text with the commonly agreed standards.

4 Moreover, the *Implementation of IMO courses* (Appendix I) is a standard appendix to all IMO Model Courses. However the content of this appendix is in some elements outdated with respect to teaching equipment etc.

Proposal

5 In order to harmonize the structure, to improve the quality and to assist developers and review groups in the process of drafting and reviewing IMO Model Courses it is proposed to introduce a template to be used in drafting IMO Model Courses. The proposed template is set out in the annex of this document.

6 This template could be added as an annex to the *Guidelines for the development, review and validation of model courses* (MSC-MEPC.2/Circ.15/Rev.2).

7 It is proposed to update the *Implementation of IMO courses* (Appendix I) in order to bring it in line with the present methods and equipment used in education and training. The proposed updated *Implementation of IMO courses* (Appendix I) is part of the proposed template set out in the annex.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to

.1 note the information provided;

.2 consider the proposal in paragraphs 5 to 7 and the template for drafting IMO Model Courses, as set out in the annex and;

.3 take action, as appropriate.

***

MODEL COURSE [*X.XX*]

[*MODEL COURSE TITLE*]

[*XXXX*] EDITION

Print edition (ISBN: XXX-XXX-XXXX-X) first published in XXXX
By the INTERNATIONAL MARITIME ORGANIZATION
4 Albert Embankment, London SE1 7SR

www.imo.org

Electronic edition 20xx

IMO Publication
Sales number: *xxxxxx*

ACKNOWLEDGEMENTS

IMO wishes to express its sincere appreciation to [*name of developer*] for the valuable assistance and cooperation in the development of this model course.

Contents

Foreword

[*To be inserted by the Secretariat*]

Secretary-General

Introduction

Purpose of the model course

The purpose of an IMO model course is to assist organizations that focus on maritime training with the development and introduction of courses. This also includes updating and improving existing courses so that the quality and effectiveness of seafarers' training may be consistent internationally.

It is not the intention of the model course programme to present instructors with a rigid "teaching package" which they are expected to "follow blindly". Nor is it the intention to substitute audiovisual or "programmed" material for the instructor's presence. As in all training endeavours, the knowledge, skills and dedication of the instructors are the key components in the transfer of knowledge and skills to those being trained through IMO model course material.

Rather, this document should be used as a guide. Parties should modify this course to suit their respective training programmes.

Because the educational systems and the cultural backgrounds of trainees in maritime subjects vary considerably throughout the world, the model course material has been designed to:

- identify the basic entry requirements and trainee target group for each course in universally applicable terms; and

- to specify clearly the technical content and levels of knowledge and proficiency necessary to meet the intent of the relevant IMO Conventions, Codes and related guidance material.

In order to keep the training programme up to date, it is essential that the model course users provide feedback. New information will facilitate improvements to training for persons involved in the assessment, examination and/or certification of seafarers. Information, comments and suggestions should be sent to the Head, Maritime Training and Human Element, IMO in accordance with Appendix II.

Use of the model course

To use the model course effectively, instructors should review the general outline in part B and detailed outline in part C, taking into account the information on the entry standards specified in the course framework. The trainee’s level of knowledge, skills and prior technical education should be kept in mind during this review, and any areas within the detailed syllabus which may cause difficulties due to differences between the level of the trainee and the level assumed by the course developer should be identified. To compensate for such differences, instructors may delete from the course, or reduce the emphasis on, items dealing with knowledge or skills already attained by the trainees. Instructors should also identify any academic knowledge, skills or technical training which the trainees may not have acquired prior to undertaking the course.

By analysing the detailed outline and the academic knowledge required to allow training in the technical area, instructors can develop an appropriate pre-entry course or, alternatively, insert the elements of academic knowledge required to support the technical training elements concerned at appropriate points within the technical course.

Adjustment of the course objectives, scope and content may also be necessary if in the national maritime industry, the trainees completing the course are to undertake duties which differ from the course objectives specified in the model course.

Lesson plans

Having adjusted the course content to suit the trainee intake and any revision of the course objectives, instructors should draw up lesson plans based on the detailed outline (part C) and associated reference material. Where no adjustment has been found necessary in the learning objectives of the detailed outline, the lesson plans may simply consist of the detailed outline with keywords or other reminders added to assist the instructors in the presentation of the material.

Presentation

The presentation of concepts and methodologies should be repeated in various ways until instructors are satisfied that the trainee has attained each specific learning objective. The detailed outline is laid out in learning-objective format with each objective specifying what the trainee should be able to do as the learning outcome.

Implementation

For the course to run smoothly and to be effective, considerable attention should be paid to the availability and use of:

- properly qualified instructors;
- relevant support staff;
- teaching and other spaces;
- [*simulator, appropriate equipment and teaching aids;*
- *videos, multi-media presentations;*
- *textbooks, appropriate technical papers etc.; and*
- *other relevant reference material*.]

Sound and effective preparation is the key to the successful implementation of the course. IMO has produced *Implementation of IMO courses*, which deals with this aspect in greater detail and is included as an appendix to this model course.

Training

The minimum standards of competence that should be met by seafarers are defined in [*name of applicable IMO instrument i.e. STCW Code or Circular*]. This IMO model course addresses the competences and the training required to achieve the standards for the knowledge, understanding and proficiencies (KUPs) set out in [*name/details of applicable IMO instrument*].

Part A (Course framework): provides the framework for the course with its aims and objectives and notes on the suggested teaching facilities and equipment. A list of useful teaching aids, IMO references and textbooks is also included.

Part B (General outline): provides a general outline of lectures, demonstrations and exercises for the course.

Part C (Detailed outline): gives the detailed outline. This is based on the theoretical and practical knowledge specified in the [*name of applicable IMO instrument*]. It is written as a

series of learning objectives, in other words what the trainee is expected to be able to demonstrate as a result of the teaching and training. Each of the objectives is expanded to define a required performance of knowledge, understanding and proficiency (KUP). IMO references, textbook references and suggested teaching aids are included to assist instructors in designing lessons.

Part D (Instructor manual): provides guidance notes and additional explanations to instructors on the topics and learning outcomes listed in part C. For the various topics, this part presents subject matter details, activities and recommended presentation and assessment techniques.

Part E (Evaluation and assessment): presents information to be considered concerning effective, objective evaluation and assessment. These suggestions are not inclusive and instructors may use various assessment techniques for evaluating competence. The criteria for evaluating competence is included in [*name of relevant IMO instrument*].

Mandatory provisions concerning training and assessment are given in section A-I/6 of the STCW Code that includes: qualifications of instructors, supervisors and assessors; in-service training; assessment of competence; and training and assessment within an institution. The corresponding part B of the STCW Code contains non-mandatory guidance on training and assessment.

Responsibilities of Administrations

Administrations should ensure that the training courses delivered meet the standards of competence required by the [*name of relevant IMO instrument*].

Validation

This model course has been validated by the Sub-Committee on Human Element, Training and Watchkeeping for the use of course providers who develop education and training programmes and courses which should be consistent with the requirements of IMO instruments. Validation in this context means that the Sub-Committee has found no grounds to object to the contents of this model course, but has not granted its approval to the document as the Sub-Committee does not consider any model course to be an official interpretation of IMO Instruments.

Part A: Course framework

Aim

The overall aim of this model course is to meet the mandatory minimum standard of competence for seafarers in [*name of training*] specified in [*name of applicable IMO instrument*].

Scope

This model course is designed to provide the trainees with the required knowledge and skills in [*course objective*]. This covers the competences and required knowledge, understanding and proficiencies (KUPs) specified in [*name of applicable IMO instrument*].

Objective

The objective of this model course is to provide trainees with guidance and information to obtain the knowledge, understanding and proficiency (KUP) required to achieve the objectives of the learning outcomes. Trainees should demonstrate the competences relevant to [*course objective*] as set out in [*name of applicable IMO instrument*].

The trainees who successfully complete the course should be able to demonstrate their competence, including to:

.1 [*list of competences as stated in the competence table of the applicable IMO instrument*]

Entry standards

Entry standards should be in accordance with the STCW Convention or other applicable IMO instruments, where such requirements are specified. If such requirements are not specified, it is left to the Administration to decide entry standards in accordance with national regulations and system of education.

Course certificate or document

On successful completion of the course, a document may be issued indicating that the holder has achieved the mandatory minimum standard of competence in [*course objective*] as set out in [*name of applicable IMO instrument*].

Course intake limitations

The maximum number of trainees attending each session will depend on the availability of adequate numbers of instructors, equipment and facilities available to conduct the training. The course intake is limited by the number of trainees who can receive adequate individual attention from instructors. The maximum trainee/instructor ratio may be up to 24 to 1 for classroom lectures, [*specify number*] to 1 for practical sessions [and maximum trainee per simulator station ratio may be up to [*specify number*] to 1]. Teaching staff should note that the ratios are suggestions only and can be adapted to suit individual groups of trainees depending on their experience, ability and the equipment available.

Staff requirements

Instructors, supervisors and assessors are to be appropriately qualified in accordance with the STCW Convention or other applicable IMO instruments for the particular types and levels

of training or assessment of competence of the trainees. It is left to the Administration to decide staff requirements in accordance with their national regulations.

Teaching facilities and equipment

[*description of specific facilities and equipment for the course*]

Sample
An ordinary classroom or similar meeting room with whiteboard, audio-visual aids teaching equipment or equivalent are sufficient for the lectures. In addition, when making use of audio-visual materials, it should be ensured that appropriate equipment, such as Computer Based Training (CBT) modules, running on an ordinary PC is available.

Teaching aids (A)

[*list of teaching aids that can be used for specific items in the course listed in part C Detailed outline*]

Sample
A1 Ships drawings/plans (General Arrangement, Shell Expansion)

■ **IMO references (R)**

[*list of IMO references that can be used for specific items in the course listed in part C Detailed outline*]

Sample
R1 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978

■ **Textbooks (T)**

[*list of textbooks that can be used for specific items in the course listed in part C Detailed outline. Reference should be according the Harvard style of referencing. In additional information the ISBN number can be added*]

Sample
T1 Woud, H. K. and Stapersma, D. (2002) Design of propulsion and electric power generation systems. London, England: Institute of Marine Engineers. ISBN 1-902536-47-9

■ **Bibliography (B)**

[*list of websites, documents etc. that can be used for specific items in the course listed in part C Detailed outline. Reference should be according the Harvard style of referencing. In case of books the ISBN number can be added*]

Sample website
B1 Gatfield, D. (no date) Engine-room resource management (ERM), Maritime-forum.jp. Available at: http://www.maritime-forum.jp/et/pdf/h23_EngineRoomResourceManagement_english.pdf

Sample document
B2 Engine room procedures guide (2020). UK: Marisec. ISBN 978-1-9162322-2-8

Note: Instructors should ensure that the latest editions of references be used.

Part B: General outline

Lectures

As far as possible, lectures should be presented within a familiar context and should make use of practical examples. They should be well illustrated with diagrams, pictures, charts and videos where appropriate.

An effective manner of presentation would be to develop techniques to transfer information and then reinforce the information. For example, share with the trainees briefly what instructors are going to present to them; then cover the topic in detail; and, finally, summarize what you have shared with them. The use of audio-visual aids, handouts and notes will contribute to the effectiveness of the learning process

Timetable

This model course has been developed providing a recommended range in duration of [*specify number*] to [*specify number*] hours for lectures, demonstrations, laboratories, or simulator exercises and assessment [out of which [*specify number*] is recommended for practical training]. No formal timetable is included in this model course.

The recommended range of total hours is not binding and instructors must develop their own timetable depending on:

.1 the level of skills of trainees;

.2 the number of persons to be trained;

.3 the number of instructors;

.4 simulator facilities and equipment available; and

.5 normal practices at the training establishment.

Course outline

The course comprises of [*lectures, demonstrations and simulation exercises*]. The outline below identifies the main areas of the course.

[*if applicable additional description of specific details concerning the course outline*]

The course outline should be read in conjunction with part D (Instructor manual) for further detailed guidance.

Course outline	
	Course introduction
1	**Competence #1**
1.1	Knowledge, understanding and proficiency #1.1
1.2	Knowledge, understanding and proficiency #1.2
Etc.	Etc.
2	**Competence #2**
2.1	Knowledge, understanding and proficiency #2.1

2.2	Knowledge, understanding and proficiency #2.2
Etc.	Etc.
3	**Competence #3**
3.1	Knowledge, understanding and proficiency #3.1
3.2	Knowledge, understanding and proficiency #3.2
Etc.	
Etc	Etc.
Etc	Etc.

Note: Care should be taken when indicating the duration for the model course taking into account the knowledge and skills of the trainees, the class size and the resources available to each training provider. (*Guidelines for the development, review and validation of model courses*)

Part C: Detailed outline

Introduction

Part C correlates the knowledge, understanding and proficiencies defined in the [*name of applicable IMO instrument*], with the specific learning outcomes that the trainees should achieve. Each specific outcome is presented as a topic or sub-topic as a learning objective reflecting the knowledge, understanding and proficiency (KUP) in [*name of applicable competence table and/or other IMO instrument*].

Learning objectives

The detailed outline has been developed in learning objective format in which the objective describes how the trainee should demonstrate the specific KUP, and the desired competence has been achieved.

All objectives are understood to be prefixed by the words, "The expected learning outcome is that the trainee is able to…"

References and teaching aids

In order to assist instructors, references are shown against the learning objectives to indicate IMO references and publications, textbooks, additional technical material and teaching aids, which may be used when preparing and presenting the course material. The following notations and abbreviations are used:

A Teaching aids

B Bibliography

R IMO reference

T Textbook

[in case detailed information may assist the model course user the following abbreviations can be used:

anx Annex

app Appendix

par Paragraph

sec Section

pag page

chp chapter

reg Regulation

res Resolution

	Knowledge, understanding and proficiency (Learning Outcome)	IMO References	Textbooks Bibliography	Teaching Aid

	Knowledge, understanding and proficiency (Learning Outcome)	IMO References	Textbooks Bibliography	Teaching Aid
	Course introduction .1 *[action verb according Appendix 4 MSC-MEPC.2/Circ.15/Rev.2 followed by text*] Etc.			[*A1*]
1	**[*Competence 1*]**			
1.1	KUP #1.1 .1 *[action verb according Appendix 4 MSC-MEPC.2/Circ.15/Rev.2 followed by text]* .2 ……. 1.2 KUP #1.2 .1 ……. Etc.	[*R1 R2*]	[*T1 B1*]	
2	**[*Competence 2*]**			
2.1	KUP #2.1 .1 *[action verb according Appendix 4 MSC-MEPC.2/Circ.15/Rev.2 followed by text]* .2 2.2 KUP #2.2 .1 ……. Etc.			
3	***[Competence 3]***			
3.1	KUP #3.1 .1 *[action verb according Appendix 4 MSC-MEPC.2/Circ.15/Rev.2 followed by text]* .2 3.2 KUP #3.2 .1			

Part D: Instructor manual

Part D provides the most detailed communication for the model course user. It should include the topics and sub-topics that are listed in part C. Here the specifics about each topic and sub-topic are discussed. These specifics include, but are not limited to subject matter details, recommended presentation and assessment techniques. Potential problems, solutions, as well as suggestions on the use of different levels of technology and teaching techniques may be presented. It is numbered and subdivided in the same manner as part B.

In case a large amount of information is deemed to be necessary for the model course users which is not available this should be placed in a separate compendium.

Part E: Evaluation and assessment

Part E provides the model course user with information concerning effective, objective evaluation and assessment. The concentration is upon developing techniques that minimize subjective testing. Here relevant and effective assessment strategies that can be used by the model course user should be presented. The strategies presented should be focussed on the content of the model course at hand. Model courses based on the STCW Convention and Code should take into account the criteria for evaluating competence included in column 3 and 4 of the tables in the STCW Code.

The text below can be (partly) used as far as applicable for the model course at hand as basis for drafting Part E.

Sample assessments and/or questionnaires relevant to the model course at hand should be included in Part E.

■ Introduction

The effectiveness of any evaluation depends to a great extent on the precise description of what is to be evaluated. Generally, in order to select the proper assessment methods and measures, the instructor should first be aware of the expected learning outcomes in terms of the scope of knowledge, understanding and proficiency required.

Thus, to assist the instructors, the detailed outline uses descriptive verbs for the specific learning outcomes, the *Guidelines for the development, review and validation of model courses*, provides action verb taxonomy for model courses. These learning outcomes provide a sound basis for the construction of suitable tests for evaluating trainee progress.

Evaluation/assessment is a way of finding out if learning objectives have been achieved. It enables the assessor to ascertain if the trainee has gained the required skills and knowledge needed to effectively demonstrate their competence to perform the duties at a given point in a course or toward qualification.

■ Assessment

In assessing the achievement of competences assessors should be guided by the criteria for evaluating competence in column 4 of the table and the learning outcomes in the detailed outline.

The purpose of evaluation and assessment is to:

- assist trainees' in learning;
- identify trainees' strengths and weaknesses;
- assess the effectiveness of an instructional strategy;
- assess and improve the effectiveness of curriculum programmes; and
- assess and improve teaching effectiveness.

The different types of evaluation/assessment can be classified as:

Initial/diagnostic assessment

Diagnostic assessment is an evaluation of a trainee's skills, knowledge, strength and areas for development. This should take place before a trainee commences a course to ensure they are on the right path. Depending on the available resources in the training institution, this assessment could be conducted individually and/or collectively.

Formative assessment

Formative assessment is an integral part of the teaching/learning process and is hence is a "continuous" assessment. It provides information on trainee's progress and may also be used to encourage and motivate them.

Formative assessment is a basic assessment skill that should be mastered by course instructors. The proper use of this form of assessment gives instructors a clear view of the impact of their teaching and informs them of the need to possibly adapt their teaching methods. It also provides feedback to trainees, motivating them and serving as a continuous basis for identifying their own strengths and weaknesses and helping them develop self-awareness.

Summative assessment

Summative assessment is designed to measure trainee achievements against defined objectives and performance targets. It may take the form of an exam or an assignment and takes place at the end of a course.

The purpose of summative assessment is to grade trainees and to assess if they have met the required level of competence.

■ **Evaluation for quality assurance**

Evaluation of the assessment process is required for quality assurance purposes and for compliance with the requirements of regulation I/8 of the STCW Convention.

The purpose of assessment with respect to quality assurance is to:

- provide feedback to instructors on trainee learning;
- evaluate a module's strengths and weaknesses; and
- improve teaching.

■ **Assessment planning**

Assessment planning should be specific, measurable, achievable, realistic and time-bound (SMART). Some methods of assessment that could be used, depending upon the course/qualification, are as follows and should all be adapted to suit individual needs:

- observation (e.g. in oral examinations, simulation exercises, practical demonstrations)
- written assessments (objective tests, essays, etc.)
- assignments, activities, projects, tasks and/or case studies
- simulations (also refer to section A-I/12 of the STCW Code)
- computer-based tests

■ **Validity**

Evaluation methods should be based on clearly defined objectives and should truly represent what is meant to be assessed, for example the relevant criteria and the specific learning outcomes of the course. There should be a reasonable balance between the subject topics involved and the testing of a trainee's knowledge, understanding and proficiency of the concepts.

■ **Reliability**

Assessments should be reliable. In other words, if the assessment was done again with a similar group/trainee, the assessor would receive similar results. The same subject may have to be delivered to different groups of trainees at different times. If other assessors are also assessing the same course/qualification, it is expected that all assessors would have similar results.

To be reliable, an evaluation should produce reasonably consistent results, no matter which type of evaluation or version of a test is being used.

If the instructors are going to assess their own trainees, they need to know what they are to assess and then decide how to do this. The "what" will come from the standards/learning outcomes of the course. The "how" may already be decided for them if it is an assignment, test or examination.

Instructors need to consider the best way to assess the skills, knowledge and attitudes of their trainees, whether this is formative and/or summative, as well as how the assessment ensures validity and reliability. All assessments should be valid, authentic, current, sufficient and reliable (VACSR), where:

- Valid: the assessment is relevant to the standards/criteria being assessed;
- Authentic: the assessment result has been produced solely by the trainee;
- Current: the assessment is still relevant at the time it is taken;
- Sufficient: the assessment covers all of the relevant scope of standards/criteria; and
- Reliable: the assessment is consistent across all trainees, over time and at the required level.

It is important to note that no single method can satisfactorily measure knowledge and skill over the entire range of matters to be tested for the assessment of competence. Care should therefore be taken to select the method most appropriate to the particular aspect of competence to be tested, bearing in mind the need to frame questions so they relate as realistically as possible to the intended learning outcomes.

■ **Evaluation of competence**

Methods for demonstrating competence in column 3 and criteria for evaluating competence in column 4 of the STCW Code set out the methods and criteria for evaluation. Instructors should refer to this table when designing an assessment.

It is essential that the trainees are assessed during the exercises to evaluate whether they have achieved the required level of competence.

Instructors and assessors should be guided by the following IMO model courses providing detailed guidance and information for effective and reliable evaluation and assessment:

.1 1.30 on Onboard Assessment;

.2 3.12 on Assessment, Examination and Certification of Seafarers;

.3 6.09 on Training Course for Instructors; and

.4 6.10 on Train the Simulator Trainer and Assessor.

■ **Advantages and disadvantages of oral and practical tests**

Some aspects of competency can only be properly evaluated by having trainees demonstrate their ability to perform specific tasks in a safe and efficient manner. The safety of the ship and the protection of the marine environment are heavily dependent on the human element. In general, all proficiencies require a practical demonstration, which in some cases can be performed either within training or in service. It is important that any practical testing used to evaluate competence is valid. This means that when conducted during a training course, the assessor needs to create an environment that has the key features of the work environment present on a ship.

The advantage of an oral/practical test is that this checks the performance of the trainee in a distinct and interactive way. In this respect, the ability of a trainee to react in an organized, systematic and prudent way can be more easily and reliably judged through an oral/practical test.

One disadvantage of oral/practical tests is that they can be time-consuming and require expensive equipment and facilities. Equipment should also be available in accordance with the knowledge, understanding and proficiencies that are to be tested.

■ **Static and dynamic assessments**

Situation chosen for assessment should be such as to allow the trainee to demonstrate competencies. The assessments may consist of non-technical and technical skills. Both static and dynamic assessment techniques may be used.

In static assessment, the assessor administers an assessment and the individual's performance on that assessment is determined by comparison to norms or set criteria. The template of assessment asks questions that are to be responded to with a yes or no, with any additional reporting if necessary.

Dynamic assessment, in contrast to static assessment, looks at an individual's ability to acquire skills or knowledge during the evaluation. It should be carried out during a situation i.e. simulator exercise in order to review both technical and non-technical skills. Assessments should be prepared in detail in order to assess learning outcomes of the course. The assessor should evaluate behaviours or practices as positive and negative within three different scales: unsatisfactory, needs improvement, meets expectations as summarized in the below table.

Assessment Criteria	
Meets expectations (consistently meets expectations; meets all and often exceeds expectations)	- Demonstrates this competency at a level appropriate for the position. - Meets and sometimes exceeds expected results. Is reliably and consistently successful. - May be viewed as a role model or mentor and helps others develop this competency.

Needs improvement (sometimes meets expectations)	- Needs further development, guidance or evaluation to consistently demonstrate this competency at a level appropriate for the position. - Needs to strengthen this competency to achieve results - Does not always learn from feedback, coaching or training.
Unsatisfactory (does not meet expectations)	- Regularly fails to achieve results. - Regularly demonstrates behaviours inconsistent with this competency. - Does not follow through on feedback, coaching or training.

Source: Adopted from Behavioural Competence Assessment and Verification, OCIMF (2018)

Appendix I – Implementation of IMO courses

Contents

Part 1: Preparation

1. Introduction

1.1 The success of any enterprise depends heavily on sound and effective preparations.

1.2 Although the IMO model course "package" has been made as comprehensive as possible, it is nonetheless vital that sufficient time and resources are devoted to preparation. Preparation not only involves matters concerning administration or organization, but also includes the preparation of any course notes, drawings, sketches, digital presentations, etc., which may be necessary.

2. General considerations

2.1 The course "package" should be studied carefully; in particular the detailed outline and associated material should be attentively and thoroughly studied. This is vital if a clear understanding is to be obtained of what is required, in terms of resources necessary to successfully implement the course.

2.2 A "checklist", such as that set out in annex A1, should be used throughout all stages of preparation to ensure that all necessary actions and activities are being carried out in good time and in an effective manner. The checklist allows the status of the preparation procedures to be monitored and helps in identifying the remedial actions necessary to meet deadlines. It will be necessary to hold meetings of all those concerned in presenting the course from time to time to assess the status of the preparation and "trouble-shoot" any difficulties.

2.3 The detailed outline should be discussed with the teaching staff who are to present the course, and their views received on the parts they are to present. A study of the detailed outline will determine whether the incoming trainees need preparatory work to meet the entry standard. The detailed outline is constructed in "training outcome" format. Each specific outcome states precisely what the trainee should do to show that the outcome has been achieved. An example of a model course outline and detailed outline is given in annex A2.

2.4 Part 3 deals with curriculum development and explains how a lesson plan is constructed and used. The teaching staff who are to present the course should construct notes or lesson plans to achieve these outcomes. A sample lesson plan for one of the areas of the sample course outline is provided in annex A3. It is important that the staff who present the course convey, to the person in charge of the course, their assessment of the course as it progresses.

3. Specific considerations

3.1 Scope of course

In reviewing the scope of the course, the instructor should determine whether it needs any adjustment to meet additional local or national requirements (see part 3).

3.2 Course objective

3.2.1 The course objective, as stated in the course material, should be very carefully considered so that its meaning is fully understood. Does the course objective require expansion to encompass any additional task that national or local requirements will impose upon those who successfully complete the course? Conversely, are there elements included which are not validated by national industry requirements?

3.2.2 It is important that any subsequent assessment made of the course should include a review of the course objectives.

3.3 Entry standards

3.3.1 Entry standards should be in accordance with the STCW Convention or other applicable IMO instruments, where such requirements are specified. If such requirements are not specified, it is left to the Administration to decide entry standards in accordance with national regulations and system of education.

3.3.2 If the entry standard will not be met by your intended trainee intake, those entering the course should first be required to complete an upgrading course to raise them to the stated entry level. Alternatively, those parts of the course affected could be augmented by inserting course material which will cover the knowledge required.

3.3.3 If the entry standard will be exceeded by your planned trainee intake, you may wish to abridge or omit those parts of the course the teaching of which would be unnecessary, or which could be dealt with as revision.

3.3.4 Study the course material with the above questions in mind and with a view to assessing whether it will be necessary for the trainees to carry out preparatory work prior to joining the course. Preparatory material for the trainees can range from refresher notes, selected topics from textbooks and reading of selected technical papers, through to formal courses of instruction. It may be necessary to use a combination of preparatory work and the model course material in modified form. It should be emphasized that where the model course material involves an international requirement, such as a regulation of the International Convention Standards of Training, Certification and Watchkeeping (STCW) 1978, the standard should not be relaxed; in many instances, the intention of the Convention is to require review, revision or increased depth of knowledge by trainees for higher certificates.

3.4 Course certificate, diploma or document

Where a certificate, diploma or document is to be issued to trainees who successfully complete the course, ensure that this is available and properly worded, and that the industry and all authorities concerned are fully aware of its purpose and intent.

3.5 Course intake limitations

3.5.1 The course designers have recommended limitations regarding the numbers of trainees who may participate in the course. As far as possible, these limitations should not be exceeded; otherwise, the quality of the course will be diluted.

3.5.2 It may be necessary to make arrangements for accommodating the trainees and providing facilities for food and transportation. These aspects should be considered at an early stage of the preparations.

3.6 Staff requirements

3.6.1 Instructors, supervisors and assessors are to be appropriately qualified in accordance with the STCW Convention or other applicable IMO instruments for the particular types and levels of training or assessment of competence of the trainees. It is left to the Administration to decide staff requirements in accordance with their national regulations.

3.6.2 It is important that an experienced person, preferably someone with experience in course and curriculum development, is given the responsibility of implementing the course.

3.6.3 Such a person is often termed a "course coordinator" or "course director". Other staff, such as lecturers, instructors, laboratory technicians, workshop instructors, etc., will be needed to implement the course effectively. Staff involved in presenting the course will need to be properly briefed about the course work they will be dealing with, and a system should be set up for checking the material they may be required to prepare. To do this, it will be essential to make a thorough study of the detailed outline and apportion the parts of the course work according to the abilities of the staff called upon to present the work.

3.6.4 The person responsible for implementing the course should consider monitoring the quality of teaching in such areas as variety and form of approach, relationship with trainees, and communicative and interactive skills; where necessary, this person should also provide appropriate counselling and support.

3.7 Teaching facilities and equipment

Rooms and other services

3.7.1 It is important to make reservations as soon as is practicable for the use of lecture rooms, laboratories, workshops and other spaces.

Equipment

3.7.2 Arrangements should be made at an early stage for the use of equipment needed in the spaces mentioned in 3.7.1 to support and carry through the work of the course.

For example:

- whiteboard and writing materials or interactive board
- laboratory equipment for any associated demonstrations and experiments
- machinery and related equipment in workshops
- equipment and materials in other spaces (e.g. for demonstrating firefighting, personal survival, etc.).

3.8 Training aids

Any training aids specified as being essential to the course should be constructed or checked for availability and working order.

3.9 Audio-visual aids

Audio-visual aids (AVA) may be recommended to reinforce the learning process in some parts of the course. Such recommendations will be identified in Part A of the model course. The following points should be borne in mind:

Internet connection, interactive boards, virtual reality, cloud computing, computers, loudspeakers or projectors should be checked and tested before each use.

The electricity supply should be checked for correct voltage, and every precaution should be taken to ensure that the equipment operates properly and safely. It is important to use a proper screen which is correctly positioned; it may be necessary to exclude daylight in some cases. A check should be made to ensure that appropriate screens or blinds are available. All material to be presented should be test-run to eliminate any possible troubles, arranged in the correct

sequence in which it is to be shown, and properly identified and cross-referenced in the lesson plans.

3.10 IMO references

The content of the course, and therefore its standard, reflects the requirements of all the relevant IMO international conventions and the provisions of other instruments as indicated in the model course. The relevant publications can be obtained from the Publication Service of IMO, and should be available, at least to those involved in presenting the course, if the indicated extracts are not included in a compendium supplied with the course.

3.11 Textbooks

The detailed outline may refer to textbooks. It is essential that these books in hard copy or digital version are available to each student taking the course. If supplies of textbooks are limited, a copy should be loaned to each student, who will return it at the end of the course. Again, some courses are provided with a compendium which includes all or part of the training material required to support the course.

3.12 Bibliography

Any useful supplementary source material is identified by the course designers and listed in the model course. This list should be supplied to the trainees so that they are aware where additional information can be obtained, and it is recommended to have at least two hard copies or digital copies of each book or publication available for reference in the training institute library.

3.13 Timetable

Model courses are developed providing a recommended duration of time for lectures, demonstrations, laboratories or simulator exercises and assessment. No formal timetable is included in model courses.

Instructors should develop their own timetable as part of the development of the syllabus depending on:

.1 the level of skills of trainees;

.2 the number of persons to be trained;

.3 the number of instructors;

.4 simulator facilities and equipment available; and

.5 normal practices at the training establishment.

Part 2: Notes on Teaching Technique

1 Preparation

1.1 Identify the section of the syllabus to be presented.

1.2 Read and study thoroughly all the syllabus elements.

1.3 Obtain the necessary textbooks or reference papers which cover the training area to be presented.

1.4 Identify the equipment which will be needed, together with support staff necessary for its operation.

1.5 It is essential to use a "lesson plan", which can provide a simplified format for coordinating lecture notes and supporting activities. The lesson plan breaks the material down into identifiable steps, making use of brief statements, possibly with keywords added, and indicating suitable allocations of time for each step. The use of audio-visual material should be indexed at the correct point in the lecture with an appropriate allowance of time. The audio-visual material should be test-run prior to its being used in the lecture. An example of a lesson plan is shown in annex A3.

1.6 The syllabus is structured in training outcome format and it is thereby relatively straightforward to assess each trainee's grasp of the subject matter presented during the lecture. Such assessment may take the form of further discussion, oral questions, written tests or selection-type tests, such as multiple-choice questions, based on the outcomes used in the syllabus. Selection-type tests and short-answer tests can provide an objective assessment independent of any bias on the part of the assessor. For certification purposes, assessors should be appropriately qualified for the training or assessment.

Remember: poor preparation is a sure way to lose the interest of a group.

1.7 Check the rooms to be used before the lecture is delivered. Make sure that all the equipment and apparatus are ready for use and that any support staff are also prepared and ready.

2 Delivery

2.1 Always face the people you are talking to; never talk with your back to the group.

2.2 Talk clearly and sufficiently loudly to reach everyone.

2.3 Maintain eye contact with the whole group as a way of securing and maintaining their interest (i.e. do not look continuously at one person, nor at a point in space).

2.4 People are all different, and they behave and react in different ways. An important function of a lecturer is to maintain interest and interaction between members of a group.

2.5 Some points or statements are more important than others and should therefore be emphasized. To ensure that such points or statements are remembered, they should be restated several times, preferably in different words.

2.6 If a whiteboard or smartboard is to be used, any writing on it should be clear and large enough for everyone to see. Use colour to emphasize important points, particularly in sketches.

2.7 It is only possible to maintain a high level of interest for a relatively short period of time; therefore, break the lecture up into different periods of activity to keep interest at its highest level. Speaking, writing, sketching, use of audio-visual material, questions, and discussions can all be used to accomplish this. When a group is writing or sketching, walk amongst the group, looking at their work, and provide comment or advice to individual members of the group when necessary.

2.8 When holding a discussion, do not allow individual members of the group to monopolize the activity, but ensure that all members have a chance to express opinions or ideas.

2.9 If addressing questions to a group, do not ask them collectively; otherwise, the same person may reply each time. Instead, address the questions to individuals in turn, so that everyone is invited to participate.

2.10 It is important to be guided by the syllabus content and not to be tempted to introduce material which may be too advanced or may contribute little to the course objective. There is often competition between instructors to achieve a level which is too advanced. Also, instructors often strongly resist attempts to reduce the level to that required by a syllabus.

2.11 Finally, effective preparation makes a major contribution to the success of a lecture. Things often go wrong; preparedness and good planning will contribute to putting things right. Poor teaching cannot be improved by good accommodation or advanced equipment, but good teaching can overcome any disadvantages that poor accommodation and lack of equipment can present.

Part 3: Curriculum Development

1 Curriculum

The dictionary defines curriculum as a "the subjects that are included in a course of study" while course outline is defined as "a list of the topics, books, etc. that students should study in a particular subject". A syllabus is a document that outlines the content, objectives, and expectations of a specific course. Thus, in general terms, a curriculum is simply a course, while course outline can be thought of as a list (traditionally, a "list of things to be taught") and a syllabus includes important details such as course title, credits, meeting times, learning outcomes, and course structure.

2 Course content

The subjects which are needed to form a training course, and the precise skills and depth of knowledge required in the various subjects, can only be determined through an in-depth assessment of the job functions which the course trainees are to be trained to perform (job analysis). This analysis determines the training needs, thence the purpose of the course (course objective). After ascertaining this, it is possible to define the scope of the course.

(Note: Determination of whether the course objective has been achieved may quite possibly entail assessment, over a period, of the "on-the-job performance" of those completing the course. However, the detailed learning outcomes are quite specific and immediately assessable.)

3 Job analysis

A job analysis can only be properly carried out by a group whose members are representative of the organizations and bodies involved in work covered by the course. The validation of results, via review with persons currently employed in the job concerned, is essential if undertraining and overtraining are to be avoided.

4 Course plan

Following definition of the course objective and scope, a course plan or outline can be developed. Potential students (the trainee target group) should be identified, the entry standard to the course decided and the prerequisites defined.

5 Outline

The final step in the process is the preparation of the detailed outline with associated time scales; the identification of those parts of textbooks and technical papers which cover the training areas to a sufficient degree to meet, but not exceed, each learning outcome; and the drawing up of a bibliography of additional material for supplementary reading.

6 Outline content

The material contained in an outline is not static; technology is continuously undergoing change and there should therefore be a means for reviewing course material to eliminate what is redundant and introduce new material reflecting current practice. As defined above, a course outline can be thought of as a list and, traditionally, there, have always been an "examination outline" and a "teaching outline"; these indicate, respectively, the subject matter contained in an examination paper, and the subject matter a teacher is to use in preparing lessons or lectures.

7 Training outcomes

7.1 The prime communication difficulty presented by any course outline is how to convey the "depth" of knowledge required. A course outline is usually constructed as a series of "training outcomes" to help resolve this difficulty.

7.2 Thus, curriculum development makes use of training outcomes to ensure that a common minimum level and breadth of attainment is achieved by all the trainees following the same course, irrespective of the training institution (i.e. teaching/lecturing staff).

7.3 Training outcomes are trainee-oriented, in that they describe a result which is to be achieved by the trainee as a result of a learning process.

7.4 In many cases, the learning process is linked to a skill or work activity and, to demonstrate properly the attainment of the objective, the trainee response may have to be based on practical application or use, or on work experience.

7.5 The training outcome, although aimed principally at the trainee to ensure achievement of a specific learning step, also provides a framework for the teacher or lecturer upon which lessons or lectures can be constructed.

7.6 A training outcome is specific and describes precisely what a trainee should do to demonstrate his knowledge, understanding or skill as a product of a learning process.

7.7 The learning process is the "knowledge acquisition" or "skill development" that takes place during a course. The outcome of the process is an acquired "knowledge", "understanding", "skill"; but these terms alone are not sufficiently precise for describing a training outcome.

7.8 Verbs, such as "calculate", "explain", "list", "solve" and "state" should be used when constructing a specific training outcome, to define precisely what the trainee will be enabled to do.

7.9 In the IMO model course project, the aim is to provide a series of model courses to assist instructors in developing countries to enhance or update the maritime training they provide, and to allow a common minimum standard to be achieved throughout the world. The use of training outcomes is a tangible way of achieving this desired aim.

8 Assessment

Training outcomes describe an outcome which is to be achieved by the trainee. Of equal importance is the fact that such an achievement can be measured OBJECTIVELY through an evaluation which will not be influenced by the personal opinions and judgments of the examiner. Objective testing or evaluation provides a sound base on which to make reliable judgments concerning the levels of understanding and knowledge achieved, thus allowing an effective evaluation to be made of the progress of trainees in a course.

Annex A1

Preparation Checklist

Ref.	Component	Identified	Reserved	Electricity supply	Purchased	Tested	Accepted	Started	Finished	Status
1	Course plan									
2	Timetable									
3	Syllabus									
4	Scope									
5	Objective									
6	Entry standard									
7	Preparatory course									
8	Course certificate									
9	Trainee numbers									
10	Staffing: Coordinator Lecturers Instructors Technicians other									
11 (a) (b)	Facilities: Rooms Lab Workshop Other Class Equipment: Lab Workshop Other									
12	AVA Equipment and materials: Active board Power Point Presentation DVD/CD Video									
13	IMO Reference									
14	Textbooks									
15	Bibliography									

Annex A2

Example of a Course Outline in a subject area

Function:	Marine Engineering at the Operational Level
Competence	Maintain a safe Engineering Watch
Subject area:	Allocation, assignment and prioritization of resources
Prerequisite:	Have knowledge on engine-room resource management principles
General aims:	Have knowledge on the allocation, assignment and prioritization of engine-room resource management
Textbooks:	No specific textbook has been used to construct the detailed outline, but the instructor would be assisted in preparation of lecture notes by referring to suitable bibliography such as Assessment method for engine-room resource management based on intelligent optimization (B10)

Example of a Detailed outline

DETAILED OUTLINE			
Knowledge, understanding and proficiency	IMO Reference	Bibliography	Teaching Aid
Competence: Maintain a safe engineering watch **2. Allocation, assignment and prioritization of resources** .1 identify the engine-room resources to be managed .2 explain the characteristics of each engine-room resource to be managed .3 explain engine-room organization .4 explain the factors to be considered in the allocation, assignment and prioritization of resources in the engine-room .5 summarize the tasks, duties and responsibilities of engineer officers in allocating, assigning and prioritizing engine-room resources .6 given a case study, analyse the importance of properly allocating, assigning and prioritizing engine-room resources on board ship	R1 R2 R3 R10 R11	B3 B4 B5 B6 B8 B10	A1 A2 A5

Part C3: Detailed outline

The detailed outline is presented as a series of learning objectives. The objective, therefore, describes what the trainee should do to demonstrate that the specified knowledge or skill has been achieved.

Thus, each training outcome is supported by several related performance elements in which the trainee is required to be proficient. The detailed outline shows the required performance expected of the trainee in the tables that follow.

To assist the instructor, references are shown to indicate IMO references and publications, textbooks and teaching aids that instructors may wish to use in preparing and presenting their lessons.

The material listed in the course framework has been used to structure the detailed outline; in particular:

- teaching aids (indicated by A);
- IMO references (indicated by R);
- textbooks (indicated by T); and
- Bibliography (indicated by B)

will provide valuable information to instructors.

Explanation of information contained in the detailed outline

The information on each table is systematically organized in the following way. The line at the head of the table describes the FUNCTION with which the training is concerned. A function means a group of tasks, duties and responsibilities as specified in the STCW Code. It describes related activities which make up a professional discipline or traditional departmental responsibility on board.

The header of the first column denotes the **COMPETENCE** concerned. Each function comprises a number of competences. For example, Function 1, Marine Engineering at the Operational Level, comprises one COMPETENCE for this model course.

In this function the competence is Maintain a safe engineering watch. The term "competence" should be understood as the application of knowledge, understanding, proficiency, skills, experience for an individual to perform a task, duty or responsibility on board in a safe, efficient and timely manner.

Shown next is the required TRAINING OUTCOME. The training outcomes are the areas of knowledge, understanding and proficiency (KUPs) in which the trainee should be able to demonstrate knowledge and understanding. The COMPETENCE comprises the training outcome which is knowledge of engine-room resource management principles.

Finally, the training outcome embodies a variable number of required performances as evidence of competence. The instruction, training and learning should lead to the trainee meeting the specified required performance.

Following each numbered area of required performance there is a list of activities that the trainee should complete, and which collectively specify the standard of competence that the trainee should meet. These are for the guidance of teachers and instructors in designing lessons, lectures, tests and exercises for use in the teaching process. For example, under the topic 2, to meet the required performance, the trainee should be able to:

- identify the resources to be managed in a ship's engine-room;

- explain the characteristics of each type of engine-room resource to be managed;

- explain the responsibilities of engineer officers in allocating and assigning engine-room resources;

- identify the tasks, duties and responsibilities to be considered in the engine department for determining safe manning as provided in annex 2 to resolution A.1047(27);

- explain how the identified tasks are to be considered in the allocation, assignment and prioritization of resources in the engine-room;

- given a case, analyse the importance of properly allocating, assigning and prioritizing resources on board ship;

and so on.

IMO references (R) are listed in the column to the right-hand side. Teaching aids (A) and Bibliography (B) relevant to the training outcome and required performances are placed immediately following the TRAINING OUTCOME title.

It is not intended that lessons are organized to follow the sequence of required performances listed in the tables. The syllabus tables are organized to match with the competence in the STCW Code table A-III/1. Lessons and teaching should follow college practices. What is necessary is that all of the material is covered, and that teaching is effective to allow trainees to meet the standard of the required performance.

Annex A3

Example of a lesson plan for annex A2

Subject area: 2. Allocation, assignment and prioritization of resources **Training area: Knowledge of engine-room resource management principles**						**Lesson number: 1** **Duration: 3 hours**	
Main element **Specific training outcome teaching sequence, with memory keys**	**Teaching method**	**Bibliography**	**IMO Reference**	**A/V aid**	**Instructor Guidelines**	**Lecture Notes**	**Time (minutes)**
Allocation, assignment and prioritization of resources							
• identify the engine-room resources to be managed	Lecture	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	10
• explain the characteristics of each engine-room resource to be managed	Lecture	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	20
• explain engine-room organization	Lecture	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	30
• explain the factors to be considered in the allocation, assignment and prioritization of resources in the engine-room	Lecture	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	30
• summarize the tasks, duties and responsibilities of engineer officers in allocating, assigning and prioritizing engine-room resources	Lecture	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	30
• given a case study, analyse the importance of properly allocating, assigning and prioritizing engine-room resources on board ship	Case Study	B3, B4, B5, B6, B8, B10	R1, R2, R3, R10, R11	A2, A5	A1	Compiled by the lecturer	60

Appendix II – Instructor feedback on model course

To keep the training program up to date in future, it is essential that users provide feedback. New information will provide better training for persons involved in the assessment, examination and/or certification of seafarers. Information, comments and suggestions should be sent to the Head, Maritime Training and Human Element, IMO.

The International Maritime Organization Albert Embankment, London SE1 7SR, United Kingdom Email: ModelCourses@imo.org
Feedback on Model Course [x.xx]: [*title of model course*]
Information, comments and suggestions regarding the model course and its implementation (please give your feedback below, indicating which part or page of the model course you are commenting on).
Contact information
Nation: Organization: Title and Name: Address: Tel: Email:

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