AISM Association Internationale de Signalisation Maritime
IALA International Association of Marine Aids to Navigation and Lighthouse Authorities

IALA World Wide Academy

Model Course Overview on

LEVEL 2
Technician Training

Edition 2

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Document Revisions

Revisions to the IALA Document are to be noted in the table prior to the issue of a revised document.

Date	Page / Section Revised	Requirement for Revision
December 2013	13-21/PART B	Completed detailed training syllabus for all Level 2 Technician model courses

Foreword

The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) recognises that training in all aspects of Aids to Navigation (AtoN) service delivery, from inception through installation and maintenance to replacement or removal at the end of a planned life-cycle, is critical to the consistent provision of that AtoN service.

Under the SOLAS Convention, Chapter 5, Regulation 13, paragraph 2; Contracting Governments, mindful of their obligations published by the International Maritime Organisation, undertake to consider international recommendations and guidelines when establishing aids to navigation. Because such publications should include recommendations on the training and qualification of AtoN technicians, IALA has adopted Recommendation E-141 on Standards for Training and Certification of AtoN personnel.

Noting the Decision taken at the 52nd IALA Council to develop the IALA World Wide Academy (The Academy) as the vehicle by which IALA delivers training and capacity building, and mindful of the desire to ensure conformance with Recommendation E-141, The Academy is developing a series of Model Courses covering elements of training for AtoN personnel having Level 2 technician functions. It is intended that such courses shall be conducted by a Training Institute or Organisation accredited by a Competent Authority.[1]

This model course is intended to provide national members and other appropriate authorities charged with the provision of AtoN services with an overview and specific guidance on the training of AtoN technicians. Assistance in implementing this and other model courses may be obtained from the IALA World Wide Academy at the following address:

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[1] Definitions; clarifications of terms and common abbreviations used in the text of this Model Course are listed at Articles 1.2 and 1.3 of Recommendation E-141

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PART A – COURSE OVERVIEW

1 INTRODUCTION

1.1 Purpose of 'Level 2' Technician Model Courses

The purpose of this suite of model courses for Level 2 AtoN technicians is to assist training institutes and their teaching staff in organizing and introducing new training courses, or in enhancing, updating, or supplementing existing training material where the quality and effectiveness of the training courses may thereby be improved.

This overview document expands on the recommended syllabus for Level 2 AtoN technicians set out in Appendix 1 to IALA Recommendation E-141. Each subject module is sub-divided into elements and sub-elements. Individual model courses covering specific elements and/or sub-elements will be issued periodically by the IALA World Wide Academy.

It is not the intention of these model courses to present instructors with a rigid teaching package that they are expected to follow blindly. For teaching purposes, the subjects may be grouped and re-arranged where that is considered an advantage. The knowledge, skills and dedication of the instructor are key components in the transfer of knowledge and skills to those being trained through this model course.

1.2 Levels of Competence

Successful completion of some or all of the Level 2 model courses for AtoN technicians preferably should be considered as the **minimum** competency level for personnel tasked with conducting the installation, servicing, maintenance or replacement of marine aids to navigation and their components. Subsequent career development training is encouraged so that it forms part of the process towards the management of aids to navigation for candidates with the necessary potential and drive.

The required standard of competence is considered to be the level of proficiency that should be achieved for the proper performance of the duties carried out by the technician in his or her organization. Example levels of competence are listed in Table 1 below.

The level of competence required from an AtoN technician is shown for each element and sub-element of each Module as required. These are graded from level 1 (basic understanding) to level 3 (good understanding). Level 4 (detailed understanding) is reserved for senior technicians and AtoN Managers.

Table 1 Levels of Competence

Competence Level	Learning Outcome	Instructional Objectives	Required skills
1	The conduct of routine tasks with some supervision	A **basic** understanding of facts and principles	First stage in acquiring competency of a complex skill. Appropriate responses are identified through trial and error
2	The conduct of routine tasks unsupervised and some more complex tasks under guidance	A **satisfactory** understanding of theoretical concepts and principles so that they can be applied in practice	Correctly acquired responses have become habitual. Actions can be performed confidently and efficiently
3	The skilful conduct of many complex and non-routine tasks	A **good** understanding of the subject matter and its interaction with others leading to an analytical distinction between facts and inferences	Complex actions are inherently co-ordinated and performed smoothly, accurately and skilfully

1.3 Use of the Suite of Model Courses

The complete suite of model courses comprises 11 modules each covering a specific subject or area of knowledge in which AtoN technicians tasked with the application of such knowledge are required to have competence. The full syllabus is set out in Part B below. Not all technicians will need to be competent in all subject areas. It will be for the Competent Authority or approved AtoN service provider to determine which technicians require to take which modules. A certificate of competence will be issued to candidates on the successful completion of each module or element[2].

Each module is sub-divided into a number of subject elements. These elements are intended to cover the appropriate degree of knowledge and practical competence required for a technician to properly install; service; maintain or replace specific components of marine AtoN used on both fixed and floating aids. Each specific model course begins by stating its scope and aims, and then provides a detailed teaching syllabus based on that shown in Part B. The syllabus takes account of appropriate IALA Recommendations and Guidelines, which are listed as References in each model course.

1.4 Presentation and Lesson Plans

The majority of these model courses are practical and job-centred. They are designed to provide participants with a realistic, hands-on educational experience. The modular presentation enables the instructor to adjust the course content to suit the trainee intake and provide any revisions to the learning objectives as required. Where no adjustment has been found necessary in the learning objectives, the lesson plans may simply consist of the syllabus with keywords or other reminders added to assist the instructor in making his or her presentation of the material.

The detailed teaching syllabus for each individual module or element is laid out in a learning-objective format in which the objective for each sub-element describes what each participant must achieve to demonstrate that the necessary level of knowledge has been acquired. The learning-objective format assumes that the objective for each sub-element or lesson in each specific model course is preceded by the phrase:

> *The expected learning outcome is that the participant [trainee] has acquired the recommended level of competence in ……*

IALA publications, including other model courses issued by The Academy, are written in English as the standard international language. However it is recognised that many technicians will work in their native language. It is anticipated that accredited training organisations and institutes will adopt the most appropriate language for the instruction of participants.

1.5 Evaluation or Assessment of Participant Progress

'*The award of AtoN qualifications should be based on the principle that satisfactory results are obtained during the basic training course*'[3]. Participants should be evaluated on their understanding of the material and their ability to carry out the tasks associated with each sub-element or lesson of each model course. Additional guidance is provided in Section 5 below.

1.6 Implementation

Thorough preparation is the key to successful implementation of the course. For the course to run smoothly and effectively, considerable attention must be paid to the availability and use of:

- qualified instructors;[4]

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2 The recommended format is shown at Appendix 3 to IALA Recommendation E-141

3 IALA Recommendation E-141 Article 4.1

4 'Competent Authorities should ensure that instructors and assessors are appropriately qualified and experienced for the particular training and assessment of competence for which they are given responsibility. Instructors should hold suitable professional and academic qualifications'. IALA Recommendation E-141 Article 5.1.2

- support staff;
- rooms and other spaces;
- training equipment;
- practical training sites ashore;
- buoy Tenders or other AtoN service craft;
- safety equipment;
- reference material.

1.7 Validation

The information contained in this document has been validated on behalf of The Academy by a group of subject matter experts drawn from the IALA membership. Validation in the context of this document means that the group has found no grounds to object to its contents.

2 COURSE FRAMEWORK

2.1 Scope

This suite of courses is intended to provide technicians with the practical training necessary to become efficient and competent in specific aspects of installation; servicing; maintenance or replacement of marine AtoN and their associated components.

2.2 Objective

Upon successful completion of each of these courses, participants will have acquired sufficient knowledge and skill to install; service; maintain or replace specific marine AtoN components on the job within their organizations.

2.3 Entry Standard

The Competent Authority may prescribe minimum standards for education or work experience for prospective participants to enter these courses. In preparing each of these courses, it has been assumed that participants would have the minimum physical ability and educational background necessary to carry out successfully the function of installing; servicing; maintaining or replacing marine AtoN and their components.

It is anticipated that the minimum entry standard will include a basic technical education and a basic Health and Safety at work pre-qualification.

2.4 Requirements for Certification

Every candidate for certification should:

- be not less than 18 years of age;
- satisfy the Competent Authority that they possess the theoretical and practical knowledge necessary to carry out the responsibility of installing; servicing; maintaining or replacing marine AtoN and their components.

2.5 Course Intake Limitations

Class sizes may be limited at the discretion of the Competent Authority in order to allow the instructor to give adequate attention to individual trainees. In general, it is recommended that a maximum of 10 participants be the upper limit that a single instructor can be expected to train satisfactorily to the level of competence required.

2.6 Training Staff Requirements

All instructors, supervisors and assessors should be appropriately qualified in the subject matter covered by this course. It is expected that some if not all training staff will have held an IALA AtoN Level 1 Managers Certificate for at least 3 years[5]. In addition to technical expertise in the subject matter, approved training programmes should ensure that all members of the teaching staff have appropriate training in instructional techniques and assessment methods. As well as instructors, supervisors, and assessors, additional staff may be required for the maintenance of equipment and the preparation of materials, supplies, and work areas.

2.7 Teaching Facilities and Equipment

This suite of courses involves both classroom instruction and practical visits to work areas at sea or on land. Theoretical courses conducted in classrooms should be supported with blackboards or whiteboards and overhead projectors to enable presentation of the subject matter. An alternative to classroom instruction would be to provide the lecture material to students at a distance via the Internet or other electronic means (i.e. 'e-learning')[6]. In that case, students would need access to computers and related equipment, and should be provided with a means of interacting with instructors for discussion and to answer questions.

Practical instruction in the field will require the identification of suitable shore-based training sites, such as an operational lighthouse or beacon. Sea experience for practical instruction in buoy work will require the use of a suitable buoy tender or other AtoN service craft. Pre-booking of these facilities will be required to avoid conflict with planned operations.

2.8 Teaching Aids and References

Participants should have access to the types of equipment that they will be expected to work with on the job. Each model course will specify which teaching aids might be most appropriate to the course of instruction.

In addition to any specific reference required by the Competent Authority, each model course will list those IALA Recommendations, Guidelines or NAVGUIDE references relevant to that course.

3 OUTLINE OF MODEL COURSES

The complete suite of Level 2 model courses comprises 11 modules, sub-divided into topic elements. These are listed in the syllabus for all courses shown in Part B below. The elements of each model course are broken down into teaching modules. These should provide the course outline for a specific topic which specifies a recommended number of minimum of theoretical or practical lessons required for developing that Level 2 course. However the lesson content can be adapted or expanded to meet the specific requirements of each Competent Authority.

Each model course will propose the recommended duration for lessons and site visits; an assessment of competency and the total time to complete the whole course. An ***example*** format for each model course is shown in Table 2 below. The actual content will be decided by each Competent Authority.

[5] The 'Grandfather' clause at article 4.4 of Recommendation E-141 permits Competent Authorities to issue Level 1 Certificates to existing managers with at least 3 years' experience. The terms of the Grandfather clause expire on 31 December 2014.

[6] The Academy website plans in due course to permit access to specific course presentations to registered users.

Table 2 Example Course Outline

Module	Element	Subject	Duration (hours)	Description and Remarks
1		Introduction to AtoN		
	1.1	IALA and the NAVGUIDE	5	Function of AtoN
	1.2	The IALA Maritime Buoyage System		Categories and types
	1.3	Introduction to buoys and the light sources fitted to them	8	Types of marine lantern
	1.4	Introduction to other AtoN fitted to buoys		Types of other AtoN
	1.5	Buoy handling and safe working practices	6	Includes First Aid
	1.6	Buoy deployment and retrieval	6	Methods of recovery
	1.7	Buoy moorings	7	Mooring design/servicing
	1.8	Buoy cleaning	11.5	Includes practical task
	1.9	Introduction to buoy positioning	4	Positions at sea
	1.10	Maintenance of plastic buoys	9	Repair and maintenance
	1.11	Maintenance of steel buoys	11	Coatings; maintenance
	1.12	Introduction to power sources on buoys	10.5	Power components
	1.13	Introduction to remote monitoring of AtoN	4	Methods of monitoring
	1.14	Introduction to shore marks	5	Types of shore AtoN
		Visit to buoy maintenance facility	2	View components
		Sea experience in buoy tender	8	Practical tasks
		Assessments	12	Short written exams
		Total Instruction Hours (Days**)**	**109**	**(15 days)**

4 GUIDELINES FOR INSTRUCTORS

4.1 Introduction

The common aim of the suite of Level 2 model courses for AtoN technicians is to enable participants to return to their jobs competent to install, service, maintain or replace marine AtoN and their components. This should be conducted in a safe and efficient manner that protects the individual whilst enhancing navigational safety and preserving the marine environment. Instructors should be thoroughly acquainted with both National and International regulations concerning these issues and emphasise these aspects during instruction whenever they arise. Particular emphasis should therefore be placed on proper safety procedures throughout the training process, reinforced in particular by the instructor's personal example.

Technological advances and threats to safe navigation, many of them being addressed by the e-Navigation initiative, are generating changes and strategies to existing equipment and practices. It is essential that both instructors and assessors keep abreast of new technologies and regulations and amend or update lesson plans as necessary to reflect changes and to add new sub-elements to the detailed teaching syllabus when appropriate.

4.2 Curriculum

The levels of competence shown in Table 1 above explain what a successful participant should be capable of doing in the workplace on the completion of each of the model courses. The objective of each lesson or lecture is to ensure that each participant acquires the required level of understanding in each sub-element so that the required learning outcome can be achieved.

Although the learning objectives are set out in the suite of Level 2 model courses in a certain order, instructors are not obliged to teach them in this order. Instead, instructors should treat them in the order which they consider to be the most effective for their participants and circumstances.

Sub-elements have been grouped into lessons or lectures. The recommended duration in hours for each lecture is intended to be used as an approximate guideline for planning purposes. The hours should be adjusted as necessary to suit local circumstances or based on experience with similar courses. Each Training Organisation will determine the optimum lecture length; the sub-elements, topics or sub-topics it covers and over what period lectures will be delivered. This will depend on whether participants and instructors are available full time or whether work duties and other conflicting activities require lectures to be delivered in groups over an extended period.

It is also quite usual for different trainees to require different lengths of time to cover the same work. Flexibility should be built into each course to allow for adjustments during its running. It is recommended that no more than 5 one hour lectures are held in any one working day to allow for this flexibility and private study.

The instructor should also make an allowance for external site visits and, if appropriate, sea-time. Using the time estimates, modified as appropriate, a timetable should be drawn up to suit the normal working day and terms of the training institute. At the conclusion of the course, a discussion should be held to determine whether changes should be made to improve future courses**.**

4.3 Practical Training

As noted throughout this Course Overview, the intent is for students to have a realistic, hands-on educational experience. Many of the sub-elements, topics and sub-topics in this course lend themselves to practical training exercises in which participants would be expected to work directly with specific equipment and its associated components. Classroom instruction should be backed up, where appropriate, by practical training in the field; either ashore or afloat.

5 EVALUATION OR ASSESSMENT

To evaluate trainee progress, regular assessments must be undertaken. The nature of these assessments and the evaluation criteria used will depend on the needs of the Competent Authority, the style of training used, and the requirements of the training institute.

The assessment of competency should generally be evaluated by short but formally conducted short written tests. Questions can either be multiple choice or require short (few-word) answers. The difficulty of each question should be based on the level of competence required from the participant in that subject.

The Competent Authority will determine the pass mark for each test paper. The guiding principle should be that a participant being considered for the award of an AtoN Level 2 Certificate will be involved actively in AtoN maintenance and servicing and will consolidate his or her basic knowledge though additional on-the-job and career development training. A participant who just fails to meet the pass mark despite active participation in the course may well develop into a satisfactory technician and should be given the opportunity to demonstrate his or her potential at a formal aural ‘viva’ examination.

The following guidelines are proposed for consideration by Competent Authorities:

- The standard pass mark in each test is 60% equivalent to a satisfactory (Level 2) degree of understanding;
- Participants who fail a competency test by less than 5% will be subject to an aural (‘viva’) examination. Participants who fail the competency test by more than 5% or who do not demonstrate a satisfactory competence at a ‘viva’ interview will not be awarded a Level 2 Certificate. Further training may be required and failed participants will be required to re-sit another written competency test at a time to be decided by the Competent Authority.

PART B – LEVEL 2 TECHNCIAN TEACHING SYLLABII

1 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 1 – INTRODUCTION TO ATON

Table 3 Teaching Syllabus Module 1 – Introduction to Aids to Navigation

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
1		**Introduction to Aids to Navigation**				
	1.1	IALA and the NAVGUIDE	1	IALA WWA L2.1.1-2	5	1
	1.2	The IALA Maritime Buoyage System	2			
	1.3	Introduction to buoys and the light sources fitted to them	1	IALA WWA L2.1.3-4	8	2
	1.4	Introduction to other AtoN fitted to buoys				
	1.5	Buoy handling and safe working practices	3	IALA WWA L2.1.5-6	12	2
	1.6	Buoy deployment and retrieval	2			
	1.7	Buoy moorings	2	IALA WWA L2.1.7	7	1
	1.8	Buoy cleaning	3	IALA WWA L2.1.8	11.5	2
	1.9	Introduction to buoy positions	1	IALA WWA L2.1.9	4.5	1
	1.10	Maintenance of plastic buoys	2	IALA WWA L2.1.10	9	2
	1.11	Maintenance of steel buoys	2	IALA WWA L2.1.11	11	2
	1.12	Introduction to power sources on buoys	1	IALA WWA L2.1.12	10.5	2
	1.13	Introduction to remote monitoring of AtoN	1	IALA WWA L2.1.13	7	1
	1.14	Introduction to shore marks	1	IALA WWA L2.1.14	6	1

2 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 2 – POWER SUPPLIES

Table 4 Teaching Syllabus Module 2 – Power Supplies

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)[7]
2		**Power Supplies**				
	2.1	DC power systems	2	IALA WWA L2.2.1	15	2.5
	2.2	Primary and secondary battery maintenance	2	IALA WWA L2.2.2	8	1.5
	2.3	Photovoltaic (Solar panel) systems and maintenance	2	IALA WWA L2.2.3	7.5	1.5
	2.4	Wind generators	2	IALA WWA L2.2.4	7	1
	2.5	Mains AC power systems	1	IALA WWA L2.2.5-6	10	2
	2.6	Petrol and diesel generators	2			
	2.7	Lightning protection	2	IALA WWA L2.2.7	14	3

[7] Includes time for site visits if appropriate and tests

3 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 3 – LIGHTS AND MARINE LANTERNS

Table 5 Teaching Syllabus Module 3 – Lights and Marine Lanterns

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
3		**Lights and Marine Lanterns**				
	3.1	Introduction to light and range	1	IALA WWA L2.3.1-3	11 or 15	2 or 3
	3.2	Light sources	2			
	3.3	Colour used in marine lanterns	1			
	3.4	Light flashers and characteristics	2	IALA WWA L2.3.4-6	12	2
	3.5	Lamp changers				
	3.6	Self-contained (integrated power system) marine lanterns				
	3.7	Rotating beacons	2	IALA WWA L2.3.7-8	18	3
	3.8	Classical lenses				
	3.9	Maintenance of mercury rotating optics	1	IALA WWA L2.3.9	18	3
	3.10	Range, sector and Precision Direction lights	1	IALA WWA L2.3.10	18	3

4 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 4 – SOUND SIGNALS

Table 6 Teaching Syllabus Module 4 – Sound Signals

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
4		**Sound Signals**				
	4.1	Sound signals (general)	1	IALA WWA L2.4.1-2	6	1
	4.2	Electrical sound signals and fog detectors	2			

5 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 5 – PAINTING AND COATINGS

Table 7 Teaching Syllabus Module 5 – Paintings and Coatings

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
5		**Painting and Coatings**				
	5.1	Introduction to coatings and specifications	2	IALA WWA.L2.5.1-2	11	2
	5.2	Surface preparation	3			

6 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 6 – ATON SERVICE CRAFT AND TENDERS

Table 8 Teaching Syllabus Module 6 – AtoN service Craft and Buoy Tenders

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
6		**AtoN Service Craft and Buoy Tenders**				
	6.1	Introduction to service craft	1	IALA WWA L2.6.1-2	2	2
	6.2	Sea experience	2		8	

7 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 7 – RADAR BEACONS

Table 9 Teaching Syllabus Module 7 – Radar Beacons

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
7		**Radar Beacons (Racons)**				
	7.1	Introduction to Racons and their configuration	2	IALA WWA L2.7.1-2	9.5	2
	7.2	Testing and quality control				

8 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 8 – AUTOMATIC IDENTIFICATION SYSTEM

Table 10 Teaching Syllabus Module 8 – Automatic Identification System

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
8		**Automatic Identification System (AIS)**				
	8.1	AIS AtoN Operations	1	IALA WWA L2.8.1	18	3

9 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 9 – RADIONAVIGATION/DGNSS

Table 11 Teaching Syllabus Module 9 – Radionavigation and Differential Global Navigation Satellite Systems

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
9		**Radionavigation and Differential Global Navigation Satellite Systems**				
	9.1	Introduction to Radionavigation Systems	1	IALA WWA L2.9.1-5	8	1 or 2
	9.2	Position, Navigation and Timing (PNT)	1			
	9.3	Accuracy, integrity, continuity, availability and vulnerability	1			
	9.4	Applications of GNSS on AtoN	1			
	9.5	Introduction to DGNSS and principles of operation	1			
	9.6	DGNSS receivers; integrity and reference modules	2	IALA WWA L2.9.6-9	13	2
	9.7	DGNSS transmission stations	2			
	9.8	DGNSS operation and maintenance	2			
	9.9	Monitoring of accuracy and signal strength	2			

10 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 10 – REMOTE MONITORING AND CONTROL

Table 12 Teaching Syllabus Module 10 – Remote Monitoring and Control

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
10		**Remote Monitoring and Control**				
	10.1	Principles of remote monitoring	2	IALA WWA.L2.10.1-2	8	2
	10.2	Parameters for remote monitoring and alarms	2			

11 MODEL COURSE TEACHING SYLLABUS FOR ATON LEVEL 2 TECHNICIANS – MODULE 11 – STRUCTURES, MATERIALS AND MAINTENANCE

Table 13 Teaching Syllabus Module 11 – Structures, Materials and AtoN Maintenance

Module	Element	Subject	Level of Competence	Model Course	Total Duration (hours)	Total Duration (Days)
11		**Structures, Materials and AtoN Maintenance**				
	11.1	Introduction to materials	2	IALA WWA L2.11.1-5	5.5	1
	11.2	Aids to Navigation structures	1			
	11.3	Corrosion of structures	2			
	11.4	Cathodic Protection	3			
	11.5	Weathering of stone and concrete	1			
	11.6	Preservation of structures	2	IALA WWA L2.11.6	16	2 or 3
	11.7	Maintenance planning and records	3	IALA WWA L2.11.7	6	1