

**Approval Conditions
for Operating
Mandatory Safety Training Courses**

Part II – Module 3

Course Design and Specifications

For

- (A) Training Course for New Operators of Crane**
- (B) Training Course for Experienced Operators of Crane**
- (C) Revalidation Training Course for Operators of Crane**

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Inquiry

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Contents

1.	Overview.....	1
2.	Admission criteria.....	3
3.	Qualifications of trainer.....	4
4.	Trainees to trainer ratio.....	5
5.	Class size.....	6
6.	Course duration.....	6
7.	Attendance	7
8.	Lesson plan	7
9.	Course contents.....	7
10.	Display, demonstration and practising	8
11.	Examination	8
12.	Validity period of certificate.....	9
13.	Standard certificate format	9
14.	Training records.....	11

Annex 1 Course Contents for Training for Operators of Crane

1. Overview

- 1.1 The terms and abbreviations adopted in this module follow those defined in Part I. This module is Part II – 3 of the AC which covers 3 types of crane operator training courses, i.e. 2 full courses and 1 revalidation course. This module should be read together with Part I of this AC.
- 1.2 Regulation 15A(1)(b) of the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations (“the Regulation”), Cap 59J, requires that every person operating a crane in any industrial undertaking should hold a valid certificate issued by the specified body or by any other person specified by the Commissioner for Labour. In this regard, the Commissioner for Labour is empowered by the Regulation to specify person to run the following safety training courses and issue relevant certificates to trainees who have successfully completed the relevant training courses:
- (A) Training Course for New Operators of Crane (“Full Course (New Operator)”);
 - (B) Training Course for Experienced Operators of Crane (“Full Course (Experienced Operator)”); and
 - (C) Revalidation Training Course for Operators of Crane (“Revalidation Course”).
- 1.3 Procedures for application for course recognition are stipulated in the GN. Applicant who wishes to run any full course or revalidation course should submit an application to CL for course recognition.
- 1.4 Unless stated otherwise, requirements stated in this module are applicable to any full course and revalidation course.
- 1.5 TCP should ensure that the course materials used should comply with the requirements of this module.

- 1.6 The objective of the full courses are to provide basic safety training to prospective crane operators so as to enhance their occupational safety and health awareness, attitude towards accident prevention and operational competence in connection with the operation of a crane and to prevent work accidents. The trainees will be issued with a certificate upon successful completion of the course.
- 1.7 Revalidation course aims to provide refresher training to holders of crane operator certificates, which are expiring or expired, so as to enhance or reinforce their occupational safety and health awareness, attitude towards accident prevention and operational competence in connection with the operation of a crane. Upon successful completion of the course, the trainee will be issued with a new certificate.
- 1.8 At the end of any full courses, the trainees should be able to:
 - 1.8.1 Demonstrate the required competence and appropriate skills for safe operation of the type of crane involved;
 - 1.8.2 Describe the basic legal requirements prescribed under relevant safety legislation applicable to safe operation of lifting appliances and lifting gear, including the understanding of their legal liabilities and consequences under the provisions of the relevant legislation;
 - 1.8.3 Understand the construction, performance, maintenance and operation of the type of crane involved;
 - 1.8.4 List potential hazards associated with the operation of lifting appliances and lifting gear and their preventive measures;
 - 1.8.5 Describe the common types of work-related accidents in lifting operation; identify possible causes of, and means of preventing such occurrences;
 - 1.8.6 Understand the importance of, and procedures for, reporting accidents and dangerous occurrences;
 - 1.8.7 Grasp the types, purposes, correct selection procedures and the proper use of personal protective equipment commonly required in operating the type of crane involved; and
 - 1.8.8 Demonstrate the necessary safety attitude to safeguard themselves and other workers while operating the type of

crane involved.

- 1.9 At the end of revalidation course, the trainees should be able to:
- 1.9.1 Describe the basic legal requirements prescribed under relevant safety legislation applicable to safe operation of lifting appliances and lifting gear, including the understanding of their legal liabilities and consequences under the provisions of the relevant legislation;
 - 1.9.2 List potential hazards associated with the operation of lifting appliances and lifting gear and their preventive measures;
 - 1.9.3 Describe the typical/alarming accidents (including causes and related preventive measures) associated with the operation of crane, in particular those occurred during the five years preceding the conduct of the revalidation course;
 - 1.9.4 Describe new technological advancements and developments in work procedures or equipment usage associated with the operation of crane, particularly those that occurred during the five years preceding the conduct of the revalidation course;
 - 1.9.5 Grasp the types, purposes, correct selection procedures and the proper use of personal protective equipment commonly required in operating the type of crane involved; and
 - 1.9.6 Demonstrate the necessary safety attitude to safeguard themselves and other workers while operating the type of crane involved.

2. Admission criteria

- 2.1 Full course (New Operator) is run for trainee who
- does not possess experience in operating the type of crane involved and without holding a relevant operator certificate; or
 - possesses a relevant operator certificate which has expired for more than 6 months.
- 2.2 Full course (Experienced Operator) is run for trainee who
- possesses prior knowledge and experience in operating the type of

crane involved but without holding a relevant operator certificate, and his/her experience has to be verified in writing by the employers that the applicant has actively engagement in the operation of the type of crane involved at least one year; or

- possesses a relevant operator certificate which has expired for more than 6 months.

2.3 A TCP should ensure that applicant to be admitted to a revalidation course should

- at the time of application, be holding a relevant operator certificate which either will expire within 6 months or has expired for not more than 6 months; and
- possess at least 3 years of experience for the past 5 years preceding application and attendance of the revalidation course and his/her experience has to be verified in writing by the employers that the applicant has actively engagement in the operation of the type of crane involved in specified years of working.

2.4 A TCP should ensure that trainee admitted to its full course (new operator), full course (experienced operator) and revalidation course has attained the age of 18 years.

3. Qualifications of trainer

3.1 A TCP should ensure that its trainer on the ***theory session*** of either crane operator training course should at least possess the following:

3.1.1 Relevant academic and professional qualifications, such as a degree, higher diploma or certificate in engineering and/or safety and health discipline (preferably registered safety officer);

3.1.2 Sufficient professional training in delivery of training course (e.g. have successfully completed an acceptable instructional-skills training course, such as the certificate course of Basic Instructional Techniques by the Hong Kong

Institute of Education or the certificate course of Occupational Safety and Health Trainer by the Occupational Safety and Health Council (“OSHC”) or the certificate course of Effective Site Safety Training and Instructing Techniques Course by Construction Industry Council Training Academy (“CICTA”) or equivalent); and

3.1.3 Substantial experience on operation of the type of crane involved (normally three years’ relevant experience is preferred).

3.2 A TCP should ensure that its trainer on the ***practical session*** of full course should at least possess the following:

3.2.1 Adequate training on operation of the type of crane involved (e.g. possession of a certificate of competency issued by the manufacturer/supplier of the relevant type of crane or valid operator certificate of the relevant type of crane); and

3.2.2 Substantial experience on operation of the type of crane involved (normally three years’ relevant experience is preferred).

3.3 A TCP should ensure that its trainer possesses a Continuing Education Diploma in Occupational Safety and Health Practices issued by OSHC or equivalent, or both mandatory basic safety training and a certificate of Safety Supervisor Course issued either by OSHC or CICTA or equivalent.

4. Trainees to trainer ratio

4.1 A TCP should ensure that the maximum ratio of trainees to trainer is 15 to 1 for theory session of either crane operator training course and is 1 to 1 for the practical session of full course.

5. Class size

- 5.1 A TCP should ensure that the maximum size of a class is 15 trainees and it is the same for the full course and the revalidation course.

6. Course duration

- 6.1 The course duration of full course (New Operator) for various types of crane should depend on the type of crane involved. The general criterion of determining the minimum course duration is to give a reasonable reflection on the complexity and gravity of the crane involved and to ensure that adequate time should be provided to trainees to practise the basic operating skills of the crane involved. Therefore, the course duration may vary from one case to another. In general, the course duration (7 hours per day, but excluding break between half-day sessions or lunch time) should be ranging **from two weeks to two months** and it should include reasonable time distribution between theory session and practical session, a hands-on session for personal protective equipment of 1 hour, a written examination session of 30 minutes, a practical examination session of 30-60 minutes and a total of not more than 30 minutes recess time per day. A TCP should ensure that the minimum course duration of full course (New Operator) for a particular type of crane should be strictly followed the above requirements and clearly specified in the lesson plan submitted to the CL for approval.
- 6.2 A TCP should ensure that the minimum course duration of full course (Experienced Operator) for a particular type of crane should be 3 days (7 hours per day, but excluding break between half-day sessions or lunch time) and it should include 1 day in theory session and 2 days in practical session, a hands-on session for personal protective equipment of 1 hour, a written examination session of 30 minutes, a practical examination session of 30-60 minutes and a total of not more

than 30 minutes recess time per day.

- 6.3 A TCP should ensure that the minimum course duration of revalidation course should be 7 hours (excluding break between half-day sessions or lunch time) and it should include a hands-on session for personal protective equipment of 30 minutes, a written examination session of 30 minutes and a total of not more than 30 minutes recess time.

7. Attendance

- 7.1 A TCP should ensure that any trainee who is absent from the theory class for more than 15 minutes for any half-day sessions will be disqualified to attend the examination.

8. Lesson plan

- 8.1 A TCP should devise and submit the lesson plan(s) of course(s) applied for recognition to the CL for approval.

9. Course contents

- 9.1 A TCP should ensure that the course materials used should include all the topics and details stipulated at **Annex 1**. The TCP should also supplement additional materials in accordance with the needs of the trainees and the latest safety information. The course contents should be submitted to the CL for prior approval.

10. Display, demonstration and practising

- 10.1 A TCP should provide suitable and sufficient equipment (including safety helmet, safety shoes/boots, safety harness with lifeline and fall-arresting device, safety gloves, ear and eye protectors, respirator, portable fire extinguisher etc.) for the purpose of display, demonstration and practising.
- 10.2 A TCP should ensure that demonstration of the above personal protective equipment to trainees is provided and that all trainees should have practice on the use of them.
- 10.3 A TCP should ensure that the training venue for the practical session should be sufficient, suitable, safe and appropriate for the type of cranes involved.
- 10.4 A TCP should ensure that the crane involved in the practical training should comply with all the legal requirements as delineated under the relevant legislation and should be solely used for training during the practical session.

11. Examination

- 11.1 A TCP should ensure that every trainee attending the examination should meet the required attendance and the requirement of completing the hands-on practice.
- 11.2 The TCP should submit at least 3 sets of examination papers, each consisting of 20 different multiple-choice questions, their model answers and marking schemes to the CL for approval.
- 11.3 Time allowed for the written examination is 30 minutes and the passing mark is 50%. The time allowed for the practical examination (30 – 60 minutes) and its passing mark may varied depending on the complexity and the number of critical skills to be

examined of the type of crane involved.

- 11.4 A TCP should ensure that the trainee should pass the written examination, the practical examination and also perform all critical skills competently in the practical examination before qualifying him/her to get the certificate.

12. Validity period of certificate

- 12.1 A TCP should ensure that the validity period of certificate of crane operator issued is 5 years.
- 12.2 For full course (New Operator) and full course (Experienced Operator), validity period of the certificate should be counted from the date when the trainee successfully completes the course.
- 12.3 For revalidation courses, validity of the certificate should be counted from the day—
- 12.3.1 immediately after the expiry date of the current certificate if the revalidation course is successfully completed within 6 months prior to expiry of the current certificate, or
 - 12.3.2 of completing the revalidation course if the revalidation course is successfully completed within 6 months after expiry of the current certificate.

13. Standard certificate format

- 13.1 A TCP should ensure that the front side of the certificate of crane operator should be designed with the required words, in the format as shown in **Figure 1** and according to the specifications below. The reverse side is left to the TCP to include other information as appropriate, which should be commensurate with the purpose of the certificate.

Figure 1: Required Words and Design Format of the Front Side of Certificate of Crane Operator

起重機操作員證明書
Certificate of Crane Operator
工廠及工業經營(起重機械及起重裝置)規例第 15A(1)(b)條
Regulation 15A(1)(b) of the Factories and Industrial Undertakings
(Lifting Appliances and Lifting Gear) Regulations

持證人姓名 Holder's Name		
(中文) :		
(English) :		
編號 Reference No. :		
完成課程日期 Date of Course Completion :		
(日日/月月/年年年年) (dd/mm/yyyy)		
有效期限 Validity Period :	由 From	至 To
(日日/月月/年年年年) (dd/mm/yyyy)		止
起重機類型 Type of Crane :		
本證明書由 [某指明的人] 簽發		
Issued by [a specified person]		

*此證明書須由持證人擁有及保存。
This certificate is owned and should be kept by the certificate holder.*

(not to scale)

- 13.1.1 The certificate should be made of durable materials, either laminated or plastic, and in standard size of 85 mm x 55 mm;
- 13.1.2 A photograph (minimum size of not less than 20 mm x 25 mm) of the trainee should be incorporated into the certificate for easy identification;
- 13.1.3 For laminated card, the corner of the trainee's photo should be stamped with the TCP's company's chop;
- 13.1.4 For plastic card, the trainee's photo should be printed on the card;
- 13.1.5 Unless otherwise specified, information on the certificate should be printed in both Chinese and English;
- 13.1.6 The certificate should contain the following information:
 - The name of certificate, i.e. “起重機操作員證明書” and “Certificate of Crane Operator”;
 - The empowering legislation, i.e. “工廠及工業經營(起重機械及起重裝置)規例第 15A(1)(b)條” and “Regulation 15A(1)(b) of the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations”;
 - The Chinese and English name as printed on the Hong Kong Identity Card (or equivalent identity documents) of the certificate holder;
 - Reference number of the certificate (an “R” should be

appended to the last digit of the reference number to denote that the certificate is issued for a revalidation course);

- Date of Course Completion (in the format of DD/MM/YYYY);
- Validity period with starting date and expiry date (in the format of DD/MM/YYYY);
- Type of crane;
- Name of the certificate issuing course provider; and
- The wordings of “此證明書須由持證人擁有及保存。” and “This certificate is owned and should be kept by the certificate holder.”

14. Training records

14.1 A TCP should submit the record of every certificate issued according to the required details stipulated in Table 1 as well as the name of the course.

Table 1 : Example of Training Records

HKID/ Passport No. (TRT1)	Name of trainee (TRT2)	Class Ref. (TRC1)	Name of Trainer (TRC2)	Date of Course completion (TRC3)	Certificate Effective Date (TRT3)	Certificate Expiry Date (TRT4)	Certificate Serial No. (TRT5)
A123456(1)	Chan Siu On	ABC1	HAU To-si	13/06/2011	13/06/2011	12/06/2016	W396000201R
A123457(2)	Chan Siu Chuen	ABC1	HAU To-si	13/06/2011	23/09/2011	22/09/2016	W396000202R
A123458(3)	Chan Siu Feng	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2016	W396000203
A123459(4)	Chan Siu Lin	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2016	W396000204

Course Contents for Training for Operators of Crane

(A) Full Course (New / Experienced Operator)

1. An overview of relevant legislative provisions, including:
 - Occupational Safety and Health Ordinance (including General Duties provisions) and its Regulation;
 - Factories and Industrial Undertakings Ordinance (including General Duties provisions) and its Regulation;
 - Construction Sites (Safety) Regulations (including Part VA);
 - Factories and Industrial Undertakings (Cargo and Container Handling) Regulations;
 - Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations;
 - Factories and Industrial Undertakings (Loadshifting Machinery) Regulation;
 - Other related subsidiary regulations (e.g. Factories and Industrial Undertakings (Dangerous Substances) Regulations, Factories and Industrial Undertakings (Electricity) Regulations, Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations, Factories and Industrial Undertakings (Safety Management) Regulation, Factories and Industrial Undertakings (Confined Spaces) Regulation, Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation,...etc.); and
 - Relevant codes of practice such as those for mechanical handling safety in container yards, safe use of mobile cranes, safe use of tower cranes, land-based construction over water – prevention of fall, etc.
2. Detailed construction, performance, maintenance, operation and limitations of the type of crane involved, including interpretation of the load charts, automatic safe load indicators, etc.
3. Potential hazards in lifting operations and their prevention, including:

- lifting operation using lifting appliances and gear;
 - working at height (e.g. on cranes, top of containers etc.);
 - handling and stacking of cargoes and containers;
 - co-ordination of different work processes;
 - preventive maintenance of appliances, gear and hand tools;
 - emergency preparedness, evacuation procedures and first-aid equipment;
 - accident and dangerous occurrence reporting system and procedures.
4. An overview of common types of work-related accidents in lifting operation, their possible causes of, and means of preventing such occurrences.
5. An overview of the importance of, and procedures for, reporting accidents and dangerous occurrences.
6. Basic operating skills for the type of crane involved. The skills should include:
- conduct routine checks in accordance with manufacturer's specifications and operation/ maintenance manual or equivalent;
 - plan work (including work area inspection);
 - check controls and equipment in accordance with manufacturer's specifications and operation/ maintenance manual or equivalent;
 - lift load;
 - shut down machine in accordance with manufacturer's specifications and operation/maintenance manual or equivalent;
 - secure site.
7. Types, purpose, correct selection and proper use of personal protective equipment commonly used, including:
- safety helmet;
 - safety shoes/boots;
 - safety harness with lifeline and fall-arresting device;
 - safety gloves;

- ear and eye protectors;
- respirator.

8. The trainees are required to undergo practical training. The practical training should be composed of actual hands-on practical training of the crane involved. This should embrace the limitations and operating instructions and procedures, planning the lift, implementing the lift, and slinging techniques and so forth. The trainee should be closely overseen and coached by a practical trainer. The trainee should be able to demonstrate the basic operating skills required for the safe operation of the crane involved after the completion of the practical session.

(B) Revalidation course

1. An overview of relevant legislative provisions, including:
 - Occupational Safety and Health Ordinance (including General Duties provisions) and its Regulation;
 - Factories and Industrial Undertakings Ordinance (including General Duties provisions) and its Regulation;
 - Construction Sites (Safety) Regulations (including Part VA);
 - Factories and Industrial Undertakings (Cargo and Container Handling) Regulations;
 - Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations;
 - Factories and Industrial Undertakings (Loadshifting Machinery) Regulation;
 - Other related subsidiary regulations (e.g. Factories and Industrial Undertakings (Dangerous Substances) Regulations, Factories and Industrial Undertakings (Electricity) Regulations, Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations, Factories and Industrial Undertakings (Safety Management) Regulation, Factories and Industrial Undertakings (Confined Spaces) Regulation, Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation,...etc.); and
 - Relevant codes of practice such as those for mechanical handling safety in container yards, safe use of mobile cranes, safe use of tower cranes, land-based construction over water – prevention of fall, etc.

2. Potential hazards in lifting operations and their prevention, including:
 - lifting operation using lifting appliances and gear;
 - working at height (e.g. on cranes, top of containers etc.);
 - handling and stacking of cargoes and containers;
 - co-ordination of different work processes;
 - preventive maintenance of appliances, gear and hand tools;
 - emergency preparedness, evacuation procedures and first-aid equipment;

- accident and dangerous occurrence reporting system and procedures.
3. An overview of typical/alarming accidents (including causes and related preventive measures) associated with the operation of crane, in particular those occurred during the five years preceding the conduct of the course.
 4. An overview of new technological advancements and developments in work procedure or equipment usage associated with the operation of crane, particularly those that occurred during the five years preceding the conduct of the course.
 5. Types, purpose, correct selection and proper use of personal protective equipment commonly used, including:
 - safety helmet;
 - safety shoes/boots;
 - safety harness with lifeline and fall-arresting device;
 - safety gloves;
 - ear and eye protectors;
 - respirator.