

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

Part II – Module 2(a)

Course Design and Specifications

For

- (A) Safety Training Course for Certified Workers of Confined Spaces Operation**

- (B) Safety Training Revalidation Course for Certified Workers of Confined Spaces Operation**

Version Control Record

Version	Release Date	Effective Date	Significant Changes
1.0	5 September 2011	26 September 2011	

Inquiry

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<i>Annex 2</i>	<i>Course Contents for Safety Training for Certified Workers of Confined Spaces Operation</i>

1. Overview

- 1.1 The terms and abbreviations adopted in this module follow those defined in Part I. This module is Part II – 2(a) of the AC which covers 2 certified worker (“CW”) courses, i.e. full course and revalidation course. This module should be read together with Part I of this AC.
- 1.2 Section 8(a) of the Factories and Industrial Undertakings (Confined Spaces) Regulation (“the Regulation”), Cap 59AE, requires that no worker shall enter or work in the confined space other than CW. Being a CW, the worker should have successfully completed the relevant safety training course and have been issued with a relevant certificate. In this regard, the CL is empowered by section 4(1) of the Regulation to recognise the following safety training courses.
- (A) Safety Training Course for Certified Workers of Confined Spaces Operation (“full course”); and
- (B) Safety Training Revalidation Course for Certified Workers of Confined Spaces Operation (“revalidation course”).
- 1.3 Procedures for application for course recognition are stipulated in the GN. Applicant who wishes to run full course or revalidation course should submit an application to the CL for course recognition.
- 1.4 Unless stated otherwise, requirements stated in this module are applicable to both 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 course is to provide specific occupational safety and health training to persons who are to enter and work in confined spaces. The trainees will be issued with a CW certificate upon successful completion of the course.

- 1.7 Revalidation course aims to provide refresher training to holders of CW certificates, which are expiring or expired, to enhance or reinforce their occupational safety and health knowledge in connection with confined space activities. Upon successful completion of the course, the trainee will be issued a new certificate.
- 1.8 At the end of full course, the trainees should be able to:
- 1.8.1 Describe the basic legal requirements prescribed under relevant safety legislation applicable to confined spaces;
 - 1.8.2 Describe the nature and potential harmful effects of hazards that are likely to be present when working in confined spaces;
 - 1.8.3 Comprehend safe system of work and Permit-to-work in connection with working inside confined spaces;
 - 1.8.4 Describe possible emergency situations arising from working in confined spaces, appropriate response procedures and limitations of such procedures;
 - 1.8.5 Describe the types, principles, operation, purpose and limitations of safety equipment to be used when working in confined spaces;
 - 1.8.6 Familiarize and practise the correct and proper use of safety equipment to be used when working in confined spaces; and
 - 1.8.7 Describe the past accidents (including causes and related preventive measures) associated with working in confined spaces. The accidents should include alarming and/or serious nature ones.
- 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 confined spaces;
 - 1.9.2 Describe the nature and potential harmful effects of hazards that are likely to be present when working in confined spaces;
 - 1.9.3 Describe the past accidents (including causes and related preventive measures) associated with working in confined spaces. The accidents should include alarming and/or serious nature ones; and
 - 1.9.4 Describe new technological advancements and developments

in work procedure or equipment usage associated with working in confined spaces, particularly those that occurred during the three years preceding the conduct of the particular revalidation course.

2. Admission criteria

- 2.1 Full course is run for trainee who does not possess a CW certificate or possesses a CW certificate or combine certificates of CP and CW which has expired for more than 3 months.
- 2.2 A TCP should ensure that applicant to be admitted to a revalidation course should, at the time of application, be holding a CW certificate or combine certificates of CP and CW which either will expire within 6 months or has expired for not more than 3 months.
- 2.3 A TCP should ensure that trainee admitted to its full course and revalidation course has attained the age of 18 years.

3. Qualifications of trainer

- 3.1 A TCP should ensure that its trainers on the **theory session** of CW courses should at least possess either one of the qualifications from i to v stipulated in **Annex 1**.
- 3.2 A TCP should ensure that its trainers on the **hands-on session** of full course should at least the following :
 - 3.2.1 complete Form 5 or higher education;
 - 3.2.2 possess a certificate of Safety Supervisor Course issued either by the Occupational Safety and Health Council (“OSHC”) or Construction Industry Council Training Academy (“CICTA”) or equivalent;
 - 3.2.3 complete 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 OSHC or the certificate course of Effective Site Safety Training and Instructing Technique by the CICTA or equivalent;

- 3.2.4 possess a valid first aid certificate issued by a recognised body; and
- 3.2.5 have at least two years of practical experience directly involving working in confined spaces.

3.3 A TCP should ensure that its trainers should be Competent Persons under the Regulation.

3.4 A TCP should ensure that its trainers possess relevant experience in the use of atmospheric testing equipment and rescue equipment (such as tripod and audio and visual alarm device) and hold relevant training certificates in the use of approved breathing apparatus and reviving apparatus/resuscitator.

4. Trainees to trainer ratio

4.1 A TCP should ensure that the maximum ratio of trainees to trainer is 30 to 1 for the full and revalidation course and it is the same for theory session and hands-on session.

5. Class size

5.1 A TCP should ensure that the maximum size of a class is 30 trainees and it is the same for theory session and hands-on session.

6. Course duration

- 6.1 A TCP should ensure that the minimum course duration of full course should be 8 hours (break between half-day sessions or lunch time not included) and it should include a hands-on session of about 3 hours on the practice of safety equipment, an examination session of 30 minutes and a total of not more than 30 minutes recess time.
- 6.2 A TCP should ensure that the minimum course duration of revalidation course should be 3.5 hours and it should include an examination session of 30 minutes and a total of not more than 15 minutes recess time.

7. Attendance

- 7.1 A TCP should ensure that any trainee who is absent from the 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 2**. 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 safety equipment (including personal protective equipment such as safety helmet, safety shoes/boots, respirator and safety harness with lifeline and fall-arresting device, atmospheric testing equipment, reviving apparatus/resuscitator, approved breathing apparatus, rescue equipment such as tripod and audio and visual alarm device) for the purpose of display, demonstration or practising.
- 10.2 The safety equipment should be properly maintained and calibrated for the purpose of the training. The TCP should ensure that every trainee should safely complete the hands-on practice.

11. Examination

- 11.1 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.
- 11.2 A TCP should ensure that every trainee attending the examination should meet the required attendance and the requirement of completing the hands-on practice.
- 11.3 Time allowed for the examination is 30 minutes and the passing mark is 75%.

12. Validity period of certificate

- 12.1 A TCP should ensure that the validity period of CW certificate issued is 3 years.
- 12.2 For full course, validity period of the certificate should be counted

from the date when the trainee successfully completes the course.

12.3 For revalidation course, 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 3 months after expiry of the current certificate.

13. Standard certificate format

13.1 A TCP should ensure that front side of the CW certificate 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 CW Certificate

核准工人證明書 Certificate of Certified Worker 工廠及工業經營(密閉空間)規條第 4(1)條 Section 4(1) of the Factories and Industrial Undertakings (Confined Spaces) Regulation	
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/月/年/年/年/年) (dd/mm/yyyy)	
有效期限 Validity Period : (日/月/年/年/年/年) (dd/mm/yyyy)	由 From 至 To 止
本證明書由 [某發證機構] 簽發 Issued by [provider of recognised training course]	
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. “核准工人證明書” and “Certificate of Certified Worker”;
 - The empowering legislation, i.e. “工廠及工業經營(密閉空間)規條第 4(1)條” and “Section 4(1) of the Factories and Industrial Undertakings (Confined Spaces) Regulation”;
 - 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);
 - 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	12/06/2014	W396000201R
A123457(2)	Chan Siu Chuen	ABC1	HAU To-si	13/06/2011	23/09/2011	22/09/2014	W396000202R
A123458(3)	Chan Siu Feng	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2014	W396000203
A123459(4)	Chan Siu Lin	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2014	W396000204

Annex 1

Qualifications of a CW Course Trainer (theoretical session)

Qualifications			
A person possessing at least any one of the following qualifications and experience from (i) to (v)			
	Academic Qualifications	Experience	
i.	A Registered Safety Officer under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations.	At least two (2) years of practical experience directly involving working in confined spaces.	or
ii.	A recognized degree or post-graduate diploma in occupational safety and health, or equivalent, and with a cumulative total of not less than one (1) year of experience directly involving occupational safety and health related work.	At least two (2) years of practical experience directly involving working in confined spaces.	or
iii.	A degree in Science or Engineering, or equivalent, and a recognized certificate, diploma or higher diploma in occupational safety and health, and with a cumulative total of not less than one (1) year of experience directly involving occupational safety and health related work.	At least two (2) years of practical experience directly involving working in confined spaces.	or
iv.	A recognized certificate, diploma or higher diploma in occupational safety and health, and with a cumulative total of not less than two (2) years of experience directly involving occupational safety and health related work, one (1) year of such experience must be obtained after the academic qualification.	At least two (2) years of practical experience directly involving working in confined spaces.	or
v.	A recognized certificate in construction safety and with a cumulative total of not less than two (2) years of experience directly involving occupational safety and health related work, one (1) year of such experience must be obtained after the academic qualification.	At least two (2) years of practical experience directly involving working in confined spaces.	

Course Contents for Safety Training for Certified Workers of Confined Spaces Operation

(A) Full Course

1 Legislation

- ◆ Brief overview of Occupational Safety and Health Ordinance (including General Duties provisions) and the Regulation;
- ◆ Brief overview of Factories and Industrial Undertakings Ordinance (including General Duties provisions) and the Regulation;
- ◆ Factories and Industrial Undertakings (Confined Spaces) Regulation particularly in relation to the duties of the proprietor, competent person and certified worker;
- Brief overview of codes of practice such as those for confined space, gas welding and flame cutting, manual electric arc welding, etc.; and
- ◆ Any other applicable safety legislation such as Loadshifting Machinery Regulation, Safety Management Regulation and Part VA of Construction Sites (Safety) Regulation, etc.

2 The nature and potential harmful effects of hazards that may be present when working in confined spaces, including:

- ◆ presence of hazardous gas, vapour, dust or fume;
- ◆ deficiency of oxygen - possibly due to:
 - ◇ slow oxidation reactions of organic and inorganic substances,
 - ◇ rapid oxidation as a result of combustion,
 - ◇ dilution of air with an inert gas,
 - ◇ absorption of oxygen by grains, chemicals or soils, or
 - ◇ other physical activities.
- ◆ excess of oxygen in the environment due to leaking oxygen supply;
- ◆ ingress of hazardous gas, vapour, dust or fume;
- ◆ in-rush of mud, water, steam or other free flowing solid or liquid;
- ◆ presence of sludge that may emit hazardous gas, vapour, dust or fume;
- ◆ presence of biological hazards such as bacteria, viruses, or fungi;
- ◆ fire or explosion;
- ◆ change in temperature within confined space environment;

- ◆ excessive noise;
- ◆ operation of equipment with moving parts;
- ◆ radiation from x-rays, radiation gauges, isotopes, etc.; and
- ◆ additional hazards associated with working at height (such as the use of scaffolds and working platforms within the confined spaces), use of chemicals, working with electricity, lifting of heavy equipment.

3 Safe System of Work and Permit-to-work

3.1 Safe system of work in connection with working inside confined spaces, including:

- ◆ what is a safety system of work;
- ◆ assessing the task (can it be done from outside?);
- ◆ evaluating the risk;
- ◆ recommending safe work procedures and control measures, e.g. cleaning and/or purging;
- ◆ cleaning and/or purging (if needed);
- ◆ implementing the system; and
- ◆ monitoring the system.

3.2 Permit-to-work system in connection with working inside confined spaces, including:

- ◆ definition, functions and conditions of a permit-to-work system;
- ◆ procedures to be taken for the issue and maintenance of a work permit; and
- ◆ duties and responsibilities of the supervisors and workers in association with a work permit.

4 Emergency situations and responses, including:

- ◆ nature of possible emergency situations;
- ◆ associated rescue and response procedures;
- ◆ types, principles, operation, and correct use of safety equipment; and
- ◆ potential rescue difficulties and limitations, e.g. limited size of ingress/egress, restricted passageway, poor visibility, high temperature and humidity, inadequate lighting, etc.

- 5 Introduction of safety equipment, including:
- ◆ atmospheric testing equipment;
 - ◆ approved breathing apparatus and reviving apparatus/resuscitator;
 - ◆ rescue equipment (such as tripod and audio and visual alarm device); and.
 - ◆ personal protective equipment (such as safety helmet, safety shoes/boots, safety harness with lifeline and fall-arresting device, respirator).
- 6 Experience sharing session including the case study of past accidents of alarming and/or serious nature.

(B) Revalidation Course

1 Legislation

- ◆ Brief overview of Occupational Safety and Health Ordinance (including General Duties provisions) and Regulation;
- ◆ Brief overview of Factories and Industrial Undertakings Ordinance (including General Duties provisions) and Regulation;
- ◆ Factories and Industrial Undertakings (Confined Spaces) Regulation particularly in relation to the duties of the proprietor, competent person and certified worker;
- ◆ Brief overview of codes of practice such as those for confined spaces, gas welding and flame cutting, manual electric arc welding, etc.; and
- ◆ Any other applicable safety legislation such as Loadshifting Machinery Regulation, Safety Management Regulation and Part VA of Construction Sites (Safety) Regulation, etc.

2 The nature and potential harmful effects of hazards that may be present when working in confined spaces, including:

- ◆ presence of hazardous gas, vapour, dust or fume;
- ◆ deficiency of oxygen - possibly due to:
 - ◇ slow oxidation reactions of organic and inorganic substances,
 - ◇ rapid oxidation as a result of combustion,
 - ◇ dilution of air with an inert gas,
 - ◇ absorption of oxygen by grains, chemicals or soils, or
 - ◇ other physical activities.
- ◆ excess of oxygen in the environment due to leaking oxygen supply;
- ◆ ingress of hazardous gas, vapour, dust or fume;
- ◆ in-rush of mud, water, steam or other free flowing solid or liquid;
- ◆ presence of sludge that may emit hazardous gas, vapour, dust or fume;
- ◆ presence of biological hazards such as bacteria, viruses, or fungi;
- ◆ fire or explosion;
- ◆ change in temperature within confined space environment;
- ◆ excessive noise;
- ◆ operation of equipment with moving parts;
- ◆ radiation from x-rays, radiation gauges, isotopes, etc.; and
- ◆ additional hazards associated with working at height (such as the

use of scaffolds and working platforms within the confined spaces), use of chemicals, working with electricity, lifting of heavy equipment.

3. Brief review of typical/alarming accidents (including causes and related preventive measures) associated with confined spaces operation, in particular those occurred during the three years preceding the conduct of the course.
4. Brief review of advancement in equipment & technology referred to in this section, including:
 - ◆ atmospheric testing equipment;
 - ◆ approved breathing apparatus and reviving apparatus/resuscitator;
 - ◆ rescue equipment (such as tripod and audio and visual alarm device); and
 - ◆ personal protective equipment (such as safety helmet, safety shoes/boots, safety harness with lifeline and fall-arresting device, respirator).