

CURRICULUM, TRAINING & ASSESSMENT GUIDE

Commercial Diving Competency Standard for Inland/Inshore

**Commercial Self Contained Underwater Breathing Apparatus
(CSCUBA) Diver**

and

Surface Supplied Diving Equipment (SSDE) Diver

The Ministry Of Manpower (MOM)

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1.0 INTRODUCTION AND SCOPE

This Curriculum, Training and Assessment Guide (CTAG) provides guidance on curriculum design, training delivery and development of assessment plans for the Singapore Commercial Diving Competency Standards for Inland/Inshore Commercial Self-Contained Underwater Breathing Apparatus (CSCUBA) Diver and Surface Supplied Diving Equipment (SSDE) Diver.

This CTAG is prepared by the Workplace Safety & Health Council (WSHC) in consultation with the Commercial Diving Association (Singapore). It should be understood by the user of this guide that the requirements contained herein are the **minimum** acceptable levels.

This competency standard adopts a unitised approach for both CSCUBA and SSDE diver training and certification. To be certified as a CSCUBA or SSDE the person must have completed all the relevant units for the level of training and certification awarded as outlined in this standard. It is the responsibility of the employer/contractor who engages the occupational diver to ensure the diving personnel are suitably trained and competent for the scope of work being carried out.

1.1 Application

This guide outlines the minimum requirements that a training provider must achieve in the training and assessment of commercial diver trainees. It also serves to ensure consistency in training and assessment across training providers. This guide must be read in conjunction with the competency standards.

In addition to the requirements outlined in this guide, training and assessment of commercial diver trainees shall also be carried out in accordance with the requirements of the relevant legislations, codes of practices, technical advisories and guidelines e.g. Workplace Safety and Health Act (WSHA), Code of Practice for Diving at Work (Singapore Standards SS 511) and Technical Advisory (TA) for Inland/Inshore Commercial Diving Safety and Health.

The Accreditation Authority may utilize this CTAG to:

- (a) Approve establishments to run courses and/or assessments to the competency standard
- (b) Monitor courses to ensure standards are being maintained
- (c) Issue or recognize certificates of competence to or from persons who have completed the specified training tasks and who are deemed as having achieved the competencies described in the competency standard

Training providers may utilize this CTAG to:

- (a) Develop the course timetable, content and assessment
- (b) Develop training materials and training aids/equipment required to conduct a course
- (c) Develop means of assessing the trainees for a suitable level of competence on completion of the course

1.2 Certification

Persons requiring commercial diver certification must meet all competencies in the Singapore Commercial Diving Competency Standard for Inland/Inshore CSCUBA Diver and SSDE Diver for the level of certification being sought.

The Accredited Training Provider (ATP) may issue a "Certificate of Completion" to trainees who successfully complete the diver training and competency assessment.

The two levels of commercial diver qualification are:

- (a) Level 1: CSCUBA Diver (No Decompression; maximum depth 30m)
- (b) Level 2: SSDE Diver (Maximum depth 30m)

Note: This CTAG does not apply to the diving operations conducted within the Offshore Oil & Gas industry.

2.0 TRAINING

2.1 Training Provider Requirements

The Accreditation Authority (Ministry of Manpower (MOM)) shall approve training providers to conduct commercial diver training and assessment based on the Competency Standard for Inland/Inshore CSCUBA Diver and SSDE Diver. The training provider shall demonstrate to the Accreditation Authority that it meets the requirements set out with in this CTAG, including providing the following information:

Organisation

- (a) Name, address and contact details of the training provider.
- (b) Organisation profile and relevant registration certificates from the regulatory or registration bodies.
- (c) Training provider organigram (organisation chart).
- (d) Organisation's operational diving procedures.
- (e) Organisation's emergency procedures.
- (f) Organisation's in-date insurance policy:
 - Employers Liability
 - Third Party Public Liability
 - Equipment Liability

Course Administration

- (a) Course registration and applicant's verification process.
- (b) Sample of certificate to be awarded to competent trainees.
- (c) Risk assessments for all training and assessment activities (classroom, practical and diving).
- (d) Trainee Appeal and Grievance procedures.

Course Information

- (a) Course outline and schedule clearly stating the duration for each Competency Unit/Element.
- (b) Topic Specification Table showing the training and assessment strategies and tools.
- (c) Lesson Plan for all Competency Units/Elements. The Lesson Plan should state the trainer for each Unit/Element and the activities which will be carried out during training and assessment.
- (d) Assessment Plans for all Competency Units/Elements.
- (e) Course training materials such as trainer presentations and trainee handouts/workbooks in accordance to the Lesson Plan.
- (f) Training and assessment record formats.
- (g) Methods used to monitor trainee's performance while in the water (e.g. video, assessor in the water).

Trainer and Assessor

- (a) Details and curriculum vitae of trainers and assessors, demonstrating suitable experience and qualifications.
- (b) Supporting documents such as academic and professional certificates.

Equipment and Facility

- (a) List of training aids to be used during the course.
- (b) Comprehensive list of all diving equipment to be used for the training.

- (c) In date planned maintenance records of the diving equipment used shall be available for review if requested.
- (d) Layout plans (indicating the dimensions) and digital photographs of the training venues for training and assessment (including venues for practical diving activities),
- (e) Approval from the relevant authorities on the permission to use the locations.

The training provider shall ensure that the training and assessment comply with all safety and health requirements, including those set out in Workplace Safety and Health (WSH) Act and its subsidiary legislations, Singapore Standards SS 511, TA for Inland/Inshore Commercial Diving and Maritime Port Authority (MPA) Regulations and Notices.

2.2 Risk Management

Training and assessment of unqualified divers has a potential to raise the risk level associated with both the diving and the training provider. This is due to the fact the trainees are yet to achieve a level of competence to cope with work underwater and possible unplanned events. The training provider's procedures, dive plans, equipment maintenance schedules and risk assessments shall reflect this in order to keep the risks as low as reasonably possible (ALARP).

2.3 Trainer – Trainee Ratio

There shall be a maximum trainer to trainee ratio of **1:15** during theory training. This trainer-trainee ratio is required to ensure adequate communication and information transfer during the training process. During practical training or diving operations, the training provider must conduct risk assessment to identify the appropriate number of divers in the water, as well as the supervision, stand by divers, tenders and additional support required to ensure the diving is conducted safely and in accordance with SS 511 and TA for Inland/Inshore Commercial Diving Safety and Health.

2.4 Delivery Methods

Delivery strategies shall reflect the nature of the Competency Units/Elements and the needs of the participation.

The following means of training should be included:

- (a) Case study.
- (b) Demonstration of activity.
- (c) Group discussion.
- (d) Individual and group exercises.
- (e) Individual study of the applicable information and knowledge review.
- (f) Role play.
- (g) Skill practice.
- (h) Trainer presentation on knowledge and skills.
- (i) Written assignment.

2.5 Training Records

The training record documents the training progress of the trainee and identifies additional training needs to attain the required competencies. The training provider shall keep comprehensive records for each trainee, including the following:

- (a) Personal details.
- (b) Passport-sized photograph and copy of identification card/passport.
- (c) Completed course registration form.
- (d) Current curriculum vitae.
- (e) Copies of relevant certification e.g. education and first aid certification.
- (f) Copy of medical examination showing in-date fit to dive.
- (g) Course identification number.
- (h) Detail of all training activities e.g. attendance records, lessons completed, diving operations carried out (real or simulated).
- (i) Ongoing observation of the trainee's general demeanor, maturity, ability to work as a team member.
- (j) Training completion date for each Competency Unit.
- (k) Certification reference number (if awarded).
- (l) Name and qualifications of trainers and assistants.
- (m) Record of incidents.

3.0 ASSESSMENT

To be deemed competent and certified as a commercial diver by the training provider, the trainee shall have to meet all the performance criteria through the practical and theory assessments. All assessments shall be undertaken at training provider's facilities during the training period, by assessors appointed by the training provider.

The possible assessment results are:

- Competent (C): Trainee demonstrated the required skills, knowledge and attitude to meet the performance criteria.
- Not Yet Competent (NYC): Trainee did not demonstrate the required skills, knowledge and attitude, and requires further training.

The assessment results shall be documented and communicated to the trainee on a regular basis e.g. upon completion of assessment for each Competency Unit/Element. Any trainee who fails to attain the required performance criteria shall be given a verbal notification on the first occasion. If the trainee continually fails to meet the performance criteria, a written notification shall be given to the trainee stating that further failure to improve may result in termination of training.

Throughout the training period, the trainers should have ongoing observations/assessments on the trainee's general demeanor, and ability to work in a team and as an individual. These observations/assessments should be taken into consideration in the final assessment of the trainee.

3.1 Practical Assessment

Practical assessments should be conducted throughout the training period e.g. at the completion of each practical competency unit/element. These practical exercises shall cover a range of diving operations that bring together the broad range of skills required to dive safely and competently. During assessment activities, trainees shall be required to demonstrate safe working practices at all times. Trainees shall be provided with any required equipment and documentation. Where practicable, the assessor should not be the trainer who is training for the Competency Unit/Element.

The final practical assessments should cover at least 5 different diving scenarios and involve the trainee diver in all aspects of the diving operation, including at least 3 simulated emergency situations while acting as a stand by diver. The practical assessments may be completed at the training providers' facility or at an actual work site location.

Each practical assessment shall contribute to the final outcome upon the completion of training of the trainee being deemed Competent or Not Yet Competent.

3.1.1 Practical Assessment – Emergency Response

A commercial diver's ability to respond to emergencies is a critical skill that is difficult to assess. Hence, practical assessment should include a range of realistic simulations during the training period; these may be diving-related, or other emergency scenarios related to a diving work site e.g. simulated decompression illness on the surface, injured diver underwater, diver rescue and recovery, unconscious diver underwater, gas toxicity and fire on the work site.

In addition, the trainee's general performance throughout the training period should be taken into consideration, when assessing the trainee's ability to respond to emergencies and instructions given by the supervisor during the emergencies.

3.2 Theory Assessment

Theory assessments should be conducted throughout the course to gauge the trainee's ability and progress. These assessments should adopt various modes relevant to the subject and course content covered e.g. written reports or interview. The final theory assessment should include an overall course examination.

Each theory assessment shall contribute to the final outcome upon the completion of training of the trainee being deemed Competent or Not Yet Competent.

3.3 Assessment of Personnel with Previous Diving Experience or Training

Training providers may offer Assessment-Only Pathway to a person with previous commercial diving experience or diving qualifications, subject to approval from the Accreditation Authority. If the person successfully completes the assessments in accordance with this CTAG and meet the prerequisites outlined in paragraph 1.3 and/ or 1.5 of the Commercial Diving Competency Standards for Inland/Inshore CSCUBA Diver and/or SSDE Diver, he can be certified as a commercial diver under these Standards.

3.4 Assessment Methods

A robust and qualitative assessment process is essential to ensure the commercial diver has attained competency. For the Specific Competency Units, at least 2 assessment methods should be used for each performance criteria required of the trainee. Where appropriate, 2 or more performance criteria may be assessed collectively in an assessment activity. The following assessment strategies should be used:

- (a) Authenticated testimonies from authorized course assessors.
- (b) Case study.
- (c) Demonstration of activity.
- (d) Interview.
- (e) Observed performance in practical exercises.
- (f) Multi-choice question examination.
- (g) Verbal and written reports.
- (h) Role play.
- (i) Workplace project.
- (j) Written examination.

3.5 Assessment Records

The assessment records for each trainee shall include the following:

- (a) Personal details.
- (b) Passport-sized photograph and copy of identification card/passport.
- (c) Dates of assessments.

- (d) Details of all assessments completed, mapped against the performance criteria and stating the outcome i.e. Competent or Not Yet Competent. Please see [Annex A](#) for a sample.
- (e) Assessment of the trainee's general demeanor, and ability to work as a team member.
- (f) Course examination results.
- (g) Name and qualifications of assessors.
- (h) Record of incidents.

4.0 TRAINING STAFF, EQUIPMENT AND FACILITIES

The resources of the training provider will vary dependent on the company size and capability. This section outlines the recommended minimum levels of training staff, equipment and facilities required of the training provider to carry out training and assessment. The training provider will be required to submit the relevant information and documentation to the Accreditation Authority as stated in Section 2.

4.1 Competence of Trainers

Technical or Vocational Requirements

Trainers for specific practical skill components shall have current supervisory experience and a broad background of general diving operations. In addition to being an experienced dive supervisor, the trainers shall have substantial experience in the subject which he is providing training. Trainers shall be able to devise tasks that will develop practical aptitudes and to know the advantages and disadvantages of different methods of presentation and assessment.

The trainer should be qualified at a higher level than that which they are instructing i.e.:

- CSCUBA Diver Trainer should be at least a CSCUBA Diving Supervisor
- SSDE Diver Trainer should be a SSDE Diving Supervisor

Relevant Work Experience

The trainer should have at least 3 years of experience working as a diving supervisor for the equipment which they are providing training, have significant practical experience and good communication and interpersonal skills.

Training Qualifications

The instructional qualifications and experience of trainers is critical to ensuring trainees achieve competence as commercial divers. Trainers should hold a recognized instructional qualification OR have prior suitable experience as a trainer in the subject matter being trained. The trainer shall also possess a Statement of Attainment in WSQ Advanced Certificate in Training and Assessment (ACTA) for the following:

- CU1 Interpret the Singapore Workforce Skills Qualification Framework
- CU2 Apply adult learning principles and code of ethics relating to training
- CU4A Prepare & facilitate classroom training

4.1.1 Competence of Assistant Trainers

Assistant trainers should hold a recognized instructional qualification OR have prior suitable experience as a trainer in the subject matter being trained. The assistant trainer shall also possess a Statement of Attainment in WSQ Advanced Certificate in Training and Assessment (ACTA) for the following:

- CU1 Interpret the Singapore Workforce Skills Qualification Framework
- CU2 Apply adult learning principles and code of ethics relating to training
- CU4 Prepare & facilitate classroom training

4.1.2 Specialist Trainers for Core Competency Units

Instruction for some Core Competency Units/Elements, e.g. legislation, physics, physiology or medical topics, may be given by specialist trainers with demonstrated competence and qualification in their specialist field. While such trainers need not hold a formal qualification as dive supervisor, they must be familiar with commercial diving operations.

The specialist trainer shall also possess a Statement of Attainment in WSQ Advanced Certificate in Training and Assessment (ACTA) for the following:

- CU1 Interpret the Singapore Workforce Skills Qualification Framework
- CU2 Apply adult learning principles and code of ethics relating to training
- CU4 Prepare & facilitate classroom training

4.2 Competence of Assessors

Assessors should be independent from the training that has been conducted.

Technical or Vocational Requirements

Assessors for Specific Competency Units shall have current supervisory experience and a broad background in general commercial diving operations. In addition to being an experienced dive supervisor, the assessor shall be very experienced in the operation/task being assessed.

An assessor should be qualified at a higher level than that which they are assessing. Specifically:

- CSCUBA Diver Assessor should be at least a CSCUBA Diving Supervisor
- SSDE Diver Assessor should be a SSDE Diving Supervisor
- Specialist Assessor should have suitable certification, competence and experience for the subject being assessed.

Relevant Work Experience

Assessors should have at least 3 years of experience working as a diving supervisor for the equipment which they are assessing, have significant practical experience and good communication and interpersonal skills.

Assessment Qualifications

Assessors should hold a recognized assessor's qualification OR have prior suitable experience as an assessor in the subject matter being trained. The assessor shall also possess a Statement of Attainment in WSQ ACTA for the following:

- CU1 Interpret the Singapore Workforce Skills Qualification Framework
- CU2 Apply adult learning principles and code of ethics relating to training
- CU6 Conduct competency-based assessment

4.3 Competence of the Stand by Diver

The stand by diver shall be trained and certified in the method of diving training being carried out. In addition, the stand by diver shall have a minimum of 30 hours bottom time documented in his personal log book of which a **minimum of 3 hours** shall be at the depth the training is being carried out.

4.4 Training Locations and Facilities

All locations and facilities to be used for training and assessment have to be approved by the Accreditation Authority. The Competency Standard for Inland/Inshore CSCUBA Diver and SSDE Diver requires two types of facilities for training and assessment - a classroom environment for theory training and a practical work site (dive site) for diving.

To ensure a safe and conducive location is available for the training and assessment, the following shall be provided within the training facility.

For theory-based Competency Units/Elements:

- (a) Sufficient-sized classroom with air-conditioning, comfortable tables and chairs to accommodate trainees. Classroom should be conducive for training e.g. free from noise and odour.
- (b) Audio and visual equipment (e.g. projector and projection screen, DVD player) to display presentation slides and play DVD/CD/video to the trainees in a classroom.
- (c) IT facilities e.g. computers and internet connection (if the activities require).
- (d) White board, flip chart and marker pens.
- (e) Sufficient writing materials/calculators for each trainee for the training period.
- (f) Sufficient lighting.
- (g) Sufficient portable fire fighting appliances (in date ready for use).
- (h) Training facility floor plan identifying emergency escape routes and emergency muster location.
- (i) Hazard-free access to training facility.
- (j) First aid box (in date and complete).
- (k) Adequate and clean sanitary facilities.
- (l) Facilities for provision of drinks and snacks.

For practical-based Competency Units/Elements:

- (a) Sufficient-sized classroom/workshop to accommodate trainees.
- (b) Appropriate and sufficient diving equipment in compliance with the requirements of SS 511 and TA for the method of diving being trained.
- (c) Access to recompression chamber for training and emergency use (established within the emergency plan).
- (d) Access to sufficient locations with a controlled and manageable working environment with suitable depths of water to allow for the practical training and assessment as specified in this document.
- (e) Sufficient and suitable personal protection equipment (PPE) in good condition for the type of work being carried out.
- (f) Sufficient portable fire fighting appliances (in date ready for use)
- (g) First aid box (in date and complete) and suitable onsite medical equipment i.e. AED/ Oxygen providing equipment etc
- (h) Adequate and clean sanitary facilities.
- (i) Facilities for provision of drinks and snacks.

The training provider shall consult relevant publications such as the Code of Practice for Diving at Work, SS 511, and the Technical Advisory (TA) for Inland/ Inshore Commercial Diving Safety and Health in preparation of the training and assessment activities.

4.4.1 Emergency Procedures and Equipment

During all training operations, appropriate emergency response procedures and emergency first aid equipment shall be in place in accordance with the requirements in WSH Act, SS 511 and the TA.

5.0 TRAINING SCHEDULE

The training provider shall develop a training schedule that ensures all requirements outlined in the Singapore Commercial Diving Competency Standard for Inland/Inshore CSCUBA Diver and SSDE Diver are suitably met so that the commercial diver is competent. It is not the purpose of this Guide to provide a detailed course schedule; however the Accreditation Authority shall review the potential training provider's submission of documentation and evaluate the training schedule for completion. The duration of the schedule will depend on various aspects such as :

- (a) Number of trainees in the course.
- (b) Availability of training resources – equipment; suitable training staff.
- (c) Locations where the practical training and assessment are to be carried out.

Sections 5.1 and 5.2 provide guidance on the training and assessment duration for the competency units. These times should be used as the minimum for planning and scheduling the course.

5.1 Recommended Training and Assessment Duration – Core Competency Units

Core Competency Unit	Competency Unit Code	Recommended Hours
Legislation and Standards	CD-CCD-100A-0	8
Diving Theory: Physics	CD-CCD-100B-0	20
Dive Theory: Physiology	CD-CCD-100C-0	16
Diving Procedures	CD-CCD-100D-0	24
Underwater and Surface Operational Hazards	CD-CCD-100E-0	20
Documentation and Records	CD-CCD-100F-0	6
Course examination		2
Total Duration		96

5.2 Recommended Training and Assessment Duration – Specific Competency Units

Specific Competency Unit – CSCUBA	Competency Unit Code	Recommended Hours
CSCUBA Diving Equipment, Systems, Procedures and Practices	CD-SCD-101A-0	16
CSCUBA Diving	CD-SCD-101B-0	20
Total Duration		36
Specific Competency Unit - SSDE	Competency Unit Code	Recommended Hours
SSDE - Diving Equipment, Systems, Procedures and Practices	CD-SSD-102A-0	16
SSDE Diving	CD-SSD-102B-0	20
Total Duration		36
OPTIONAL DDC Units	Competency Unit Code	Recommended Hours
Deck Decompression Chamber Procedures (optional)	CD-SSD-102C-0	16
Deck Decompression Chamber Operator (optional)	CD-SSD-102D-0	4
Total Duration		20

5.3 Recommended Dive Duration

To elaborate further on the training and assessment duration in Section 5.2, Sections 5.3.1 and 5.3.2 outline the minimum bottom times required to be carried out at the relevant depths during the training and assessment period.

Note: A twin-lock DDC will be required to be on-site during all diver training activities.

5.3.1 Recommended Training and Assessment Dive Time - CSCUBA

CSCUBA Diving				
	Depth MSW	Number of Dives	Bottom Times	Total Minutes
Familiarization (Tank)	0 to 5	4	20	80
Training	5 to 10	5	25	125
Training	5 to 10	4	40	160
Assessment	5 to 10	2	25	50
Assessment	5 to 10	1	45	45
			Total:	460
Depth Range 15-20 Meters				
	Depth MSW	Number of Dives	Bottom Times	Total Minutes
Training	15 to 20	0	0	0
Assessment	15 to 20	0	0	0
			Total:	0
Depth Range 20-30 Meters				
	Depth MSW	Number of Dives	Bottom Times	Total Minutes
Training	25 to 30	1	15	15
Assessment	25 to 30	3	15	45
			Total Mins:	60
Total Dives:		20	Mins:	520

Notes:

1. Training providers are to ensure that every trainee goes through the number of dives and bottom times as recommended for each depth range as a minimum requirement, unless approval has been granted by MOM or the WSH Council to make variations.
2. Chamber Dives will not be counted towards the dives listed above (it is important to note that chamber dives carried out to a depth of 30m are recommended, prior to the 25 to 30-meter training and assessment dives. This will allow trainer to gauge students susceptibility to potential adverse reactions to increased pressure experienced at greater depth)
3. Until a diver has successfully achieved the assessment dives within a depth bracket, they cannot proceed to training dives in a deeper depth bracket.
4. The times are Bottom Times and do not include descent/ascent or decompression timings, which shall be additional. All dives shall be No Decompression dives.

5.3.2 Recommended Training and Assessment Dive Time - SSDE

SSDE Diving					
	Depth MSW	Number of Dives	Bottom Times	Total Minutes	
Familiarization (Tank)	0 to 5	0.00	0.00	0.00	
Training	5 to 10	6.00	25.00	150.00	
Training	5 to 10	11.00	40.00	440.00	
Assessment	5 to 10	4.00	20.00	80.00	
			Total:	670.00	
Depth Range 15-20 Meters					
	Depth MSW	Number of Dives	Bottom Times	Total Minutes	
Training	15 to 20	0	0	0	
Assessment	15 to 20	0	0	0	
			Total:	0	
Depth Range 20-30 Meters					
	Depth MSW	Number of Dives	Bottom Times	Total Minutes	
Training	25 to 30	2	15	30	
Assessment	25 to 30	2	15	30	
			Total Mins:	60	
		Total Dives:	25.00	Mins:	730.00
Chamber Dives will not be counted towards the dives listed above					

Notes:

1. Training providers are to ensure that every trainee goes through the number of dives and bottom times as recommended for each depth range as a minimum requirement, unless approval has been granted by MOM or the WSH Council to make variations.
2. Chamber Dives will not be counted towards the dives listed above (it is important to note that chamber dives carried out to a depth of 30m are recommended, prior to the 25 to 30-meter training and assessment dives. This will allow trainer to gauge students susceptibility to potential adverse reactions to increased pressure experienced at greater depth)
3. Until a diver has successfully achieved the assessment dives within a depth bracket, they cannot proceed to training dives in a deeper depth bracket.
4. The times are Bottom Times and do not include descent/ascent or decompression timings, which shall be additional. All dives shall be No Decompression dives.

6.0 TRAINING AND ASSESSMENT RESOURCES

The table below specifies the resources required for training and assessment for the Competency Units.

COMPETENCY UNIT (CODE)	RESOURCE REQUIREMENTS
All Units	<ol style="list-style-type: none"> 1. Trainers and assessors (in addition to the minimum qualifications, experience and competencies and industrial experience in the trainees' vocational focus is highly desirable) 2. Reference materials concerning WSH regulations, standards, codes of practice and guidelines 3. SS 511 and TA for Commercial Diving Safety and Health 4. Examples of diving operations manuals 5. Examples of organizational policies and procedures, including those for safety and health 6. Training locations and facilities 7. Learner's guide, including course notes, activities and assignments
CORE COMPETENCY UNITS	
Legislation and Standards (CD-CCD-100A-0)	<ol style="list-style-type: none"> 1. Reference materials concerning legislation, standards, codes of practice and guidance relating to: <ol style="list-style-type: none"> (a) commercial diving (b) workplace safety and health (c) employment
Diving Theory: Physics (CD-CCD-100B-0)	<ol style="list-style-type: none"> 1. Texts and other information resources as appropriate
Dive Theory: Physiology (CD-CCD-100C-0)	<ol style="list-style-type: none"> 1. First aid and medical equipment required for a dive operation 2. First aid and medical procedures for a diving organization
Diving Procedures (CD-CCD-100D-0)	<ol style="list-style-type: none"> 1. Reference materials concerning legislation, standards, codes of practice and guidance specific to commercial diving
Underwater and Surface operational Hazards (CD-CCD-100E-0)	<ol style="list-style-type: none"> 1. Underwater hazards 2. Surface operational hazards 3. Training videos regarding underwater hazards
Documentation and Records (CD-CCD-100F-0)	<ol style="list-style-type: none"> 1. Reference materials concerning: <ol style="list-style-type: none"> (a) Dive records (b) Checklists (c) Personal Logbooks (d) Competence Records (e) Planned Maintenance systems (f) Sample of company operational manuals and procedures (g) Decompression Tables

COMPETENCY UNIT (CODE)	RESOURCE REQUIREMENTS
	(h) Permit to work sample (i) Sample of Emergency procedure
SPECIFIC COMPETENCY UNITS - CSCUBA DIVER	
Procedures and Practices CSCUBA Diving Equipment, Systems (CD-SCD-101A-0)	1. Reference materials concerning: (a) CSCUBA equipment (b) Full face masks (various types) with communications (c) LP and HP Compressors (d) Required tools for preparing the equipment
CSCUBA Diving (CD-SCD-101B-0)	1. Appropriate dive sites 2. Fully fitted Twin-lock (two compartment) compression chamber - in date for all test requirements 3. Suitable and fit for purpose diving platform (barge, work boat, jetty, quayside, river, lake, reservoir) 4. Reference materials concerning: (a) Legislation, standards, codes of practice and guidance specific to commercial diving and WSH (b) Guidance relating to risk management and emergency management (c) Dive Plans and Risk Assessments 5. Appropriately qualified and experienced standby diver
SPECIFIC COMPETENCY UNITS - SSDE DIVER	
SSDE – Diving Equipment, Systems, Procedures and Practices (CD-SSD-102A-0)	1. Reference materials concerning: (a) SSDE equipment and procedures (b) LP Compressors (c) Diving masks and helmets (d) Required tools for preparing the system
SSDE Diving (CD-SSD-102B-0)	1. Appropriate dive sites 2. SSDE for a dive operation in accordance with the relevant standard 3. Fully fitted Twin-lock (two compartment) compression chamber - in date for all test requirements (available in accordance with the TA and SS511 requirements) 4. Suitable and fit for purpose diving platform (barge, work boat, jetty, quayside, river, lake, reservoir) 5. Reference materials concerning: (a) Legislation, standards, codes of practice and guidance specific to diving and WSH (b) Guidance relating to risk management and emergency management (c) Dive Plans and Risk Assessments 6. Appropriately qualified and experienced standby diver

COMPETENCY UNIT (CODE)	RESOURCE REQUIREMENTS
Deck Decompression Chamber Procedures (optional) (CD-SSD-102C-0)	<ol style="list-style-type: none"> 1. Fully fitted Twin-lock (two compartment) compression chamber - in date for all test requirements 2. Chamber operating procedures 3. Therapeutic tables 4. Surface decompression procedures 5. High- & Low-Pressure compressors and air supplies 6. High Pressure Oxygen Supply 7. DDC medical equipment 8. Personnel requirements: <ol style="list-style-type: none"> (a) Appropriately qualified dive supervisor (b) Qualified or trained chamber operator
Deck Decompression Chamber Operator (optional) (CD-SSD-102D-0)	<p>DDC Operational use of:</p> <ol style="list-style-type: none"> 1. Fully fitted Twin-lock (two compartment) compression chamber - in date for all test requirements 2. Chamber operating procedures 3. Therapeutic tables 4. Surface decompression procedures 5. Sufficient High- & Low-Pressure compressors and air supplies 6. Sufficient High-Pressure Oxygen Supply 7. DDC medical equipment 8. DDC dive records and logs 9. Personnel requirements: <ol style="list-style-type: none"> (a) Appropriately qualified dive supervisor (b) Qualified or trained chamber operator and tender

ANNEX A - ASSESSMENT FORM (SAMPLE)

Core Competency Unit : **Legislation and Standards (CD-CCD-100A-0)**

Competency Element : **Describe the requirements of the Singapore Standards SS 511 Code of Practice for Diving at Work**

Accredited Training Provider	
Candidate Name (as in NRIC/FIN/Ppt)	NRIC/FIN/Ppt No.
Nationality	Date of Birth

Performance Criteria	Assessment Method	Outcome (C or NYC)	Date	Assessor Comments

Assessor Name : _____ Assessor Signature : _____

Acknowledged by Candidate : _____ Candidate Signature : _____

Date : _____ (By signing, the candidate accepts the assessment outcome)

ANNEX A - SUMMARY OF ASSESSMENT (SAMPLE)

Accredited Training Provider	
Candidate Name (as in NRIC/FIN/Ppt)	NRIC/FIN/Ppt No.
Nationality	Date of Birth

Competency Unit	Competency Element	Outcome (C or NYC)	Date	Assessor Name	Assessor Signature

<p>Overall Assessment Outcome (Please Tick)</p> <p>Competent [] Not Yet Competent []</p> <p>Comments from Assessor or Candidate (including any limitations or restrictions to be noted on the certificate)</p>

Assessor Name : _____ Assessor Signature : _____

Acknowledged by Candidate : _____ Candidate Signature : _____

Date : _____ (By signing, the candidate accepts the assessment outcome)