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**SDI**

**Standards and Procedures Manual**

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**Part 3: Specialty Standards**

**SCUBA DIVING INTERNATIONAL**

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### **Revision History**

Revision Number	Date	Changes
2.0	02/27/2001	The Manual has been completely restructured and updated to reflect latest changes and additions.
2.1	09/04/2001	Editorial changes and minor updates. Added CPR1st and Buoyancy Diver specialties.
2.2	10/10/2002	Updated with latest Training Updates.
3.0	08/15/2003	Updated with latest Training Updates.
3.1	12/19/2003	Editorial changes and minor updates.
5.0	11/19/2004	Updated with latest Training Updates.
6.0	10/13/2005	Updated with 2005 training updates and minor corrections. Added Full Face Mask Diver.
7.0	10/27/2006	Editorial changes and new course standards.
8.0	11/13/2007	Updated with 2007 training updates. Minor edits.
9.0	12/01/2008	Minor corrections and clarifications.
10.0	12/31/2009	Updated with 2009 training updates. Minor edits.
11.0	01/01/2011	Major edits and minor changes.
12.0	01/01/2012	Sidemount diver added/ Minor changes and edits.
12.1	06/01/2012	Added Definitions to General Standards.
12.2	08/15/2012	General Standards 3.11, Allows for limited specialties to be combine with the Open Water Scuba Diver Course.
13.0	01/01/2013	No Changes.
14.0	01/01/2014	No Changes.

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14.1	04/01/2014	3.13 Added Junior Specialty Diver upgrade to Specialty Diver procedure
14.2	10/01/2014	3.1 Added clarification to the note at bottom regarding the Solo Diver Waiver. 13.4.2 SDI Dry Suit Diver Changed minimum age to 12. 15.9 Added new required skills to open water dive two. 23.6 SDI Solo Diver – Changed required documentation for training. 29 Visual Inspection Procedures (VIP) Complete revision.
15.0	01/01/2015	No Changes.
15.1	04/01/2015	23.2 Added #4 Show verification of completing the SDI Solo Diver eLearning course (if available in their language/region.)
15.2	08/01/2015	No Changes.
15.3	11/01/2015	Page Two: Headquarters information updated.
16.0	01/01/2016	No Changes.
16.1	04/01/2016	15.8 Added new Full Face Mask materials as optional materials for training. 22.8 Added new Sidemount materials as a requirement.
16.2	07/01/2016	4.5.2 Open Water Execution- clarified age parameters for depth limitations. 10.5 Open Water Execution- clarified age parameters for depth limitations.
17.0	01/01/2017	No Changes.
18.0	01/01/2018	3.3 Added definition of prerequisites. 4.1 Added note regarding advanced buoyancy skill practice. 9.2 Revisions made for ISO/EUF certification. 9.8 Referenced online program. 9.11 Required minimum passing score listed. 18 Changed name to read Night/Limited Visibility Added Advanced Buoyancy to Specialties AI's Can Teach matrix. 22.9.1 Changed Dual cylinders to cylinder(s). 2.9.2 Changed to Regulators appropriate for the cylinder configuration with a pressure gauge on each first stage and a total of two second stages. 22.11.5 removed "Independent cylinders". 22.11.9 added "Perform regulator switches". 30.7 Updated Required Materials. 31.7 Updated Required Materials. 31.8 Updated Required Equipment.
19.0	01/01/2019	Added "or eLearning" to all applicable sections. Removed CPROX, CPR1st, and CPROX1st AED course standards and references. 3.1.2 Clarified medical form requirement. 3.2 Added reference. 3.10 Clarified qualification procedures. 4.10 Deep Dive 1.d. Clarified age/depth limits. 9.2 and 9.10.7.c. added language to comply with EUF requirements. 22.6.1 Added "open water". 25.10 Added skills.

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		<p>29.1 Added 3-year requalification requirement.</p> <p>29.5 Suggested minimum of 6 hours.</p> <p>29.6.4.a International Training General Liability Release and Express Assumption of Risk – For non-SCUBA courses.</p> <p>Formatting updated</p>
0120	01/01/2020	<p>1. Added Item 6 to table, subsequent standards renumbered.</p> <p>2. Added Item 6 to table, subsequent standards renumbered.</p> <p>3.1.2 Defined the valid term for a physician signed medical.</p> <p>6. New standard added for Air Fill Station Technician, subsequent standards renumbered.</p> <p>15 (Formerly 14) Title changed to "Equipment Specialist".</p> <p>15.6.4.a Changed form to "Non-scuba Liability Release".</p> <p>15.6.4.b Removed.</p> <p>23.8 (Formerly 22.8) deleted item 2, renumber item 3.</p>
0620	06/01/2020	No Changes.
0121	01/01/2021	10.11.2 Expanded upon.
0221	02/01/2021	No Changes.
0122	01/01/2022	<p>3.10 Item #3 added.</p> <p>4.1 Content expanded upon.</p> <p>4.4.2 Item expanded upon.</p> <p>5.9 Items "i" &amp; "v" added, subsequent items renumbered.</p> <p>11.10 Items "e" &amp; "f" added, subsequent items renumbered.</p> <p>17.2 Content expanded upon.</p> <p>29.10 For all Open Water dives, "Plan Dive" changed to "Plan dive, to include depth, time and gas consumption".</p>
0122a	01/01/2022	No Changes.
0122b	01/01/2022	No Changes.
0522	05/20/2022	No Changes.
0123	08/25/2022	<p>5.9 Removed "Open Water" from items 1 &amp; 2.</p> <p>18. Updated Marine Ecosystems Awareness specialty to comply with ISO requirements.</p>
0124	01/01/2024	<p>3.1 New item 2</p> <p>3.5.1 Clarified visibility requirement</p> <p>4.5.2 Corrected metric depth to correspond to imperial depth</p> <p>6.2 Corrected section title</p> <p>10.3 Clarified who may teach</p> <p>10.8, 11.7, 14.7, 19.7, 26.7 Clarified required materials</p> <p>14.2 Clarified who may teach</p> <p>14.3 Added Pool/ prior to Confined Water section heading</p> <p>14.5 Added required pool/confined water/shallow open water session</p>
0125	01/01/2025	<p>2. Updated matrix and note</p> <p>3.9 Removed section and renumbered subsequent sections</p> <p>3.10 Note, Item 3. Added Course Director</p>

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		6.1 Clarified a requalification course is required every two years 10.10.4.b. Corrected to air integrated 14.10. Clarified entry requirement for OW dives 30.3.2 Clarified ratios
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## 1. Specialty Overview Matrix

	Specialty Name	Minimum Age	Number of required dives	Student to Instructor Ratio in Open Water	Prerequisite Certification or Requirements	Certification Card must be issued by SDI
4	Advanced Adventure Diver	10	5	8 or lower-see chosen specialties	Open Water	Yes
5	Advanced Buoyancy Control	10	2	8	Open Water	Yes
6	Air Fill Station Technician	18	None	N/A	N/A	Yes
7	Altitude Diver	10	2	8	Open Water	Yes
8	Boat Diver	10	2	8	Open Water	Yes
9	Computer Diver	10	2	8	Open Water	Yes
10	Computer Nitrox Diver (22-40%)	10	None	N/A	Open Water or enrollment in Open Water Diver course	Yes
11	Deep Diver	10	2	4	Open Water	Yes
12	Diver Propulsion Vehicle Diver	15	2	2	Open Water	Yes
13	Drift Diver	10	2	8	Open Water	Yes
14	Dry Suit Diver	12	2	4	Open Water	Yes
15	Equipment Specialist Diver	10	None	N/A	N/A	Yes
16	Full Face Mask Diver	15	2	8	Open Water	Yes
17	Ice Diver	18	2	2	Open Water	Yes
18	Marine Ecosystems Awareness Diver	10	2	8	Open Water	Yes

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19	Night/Limited Visibility Diver	10	2	4	Open Water	Yes
20	Research Diver	15	2	8	Open Water	Yes
21	Search and Recovery Diver	15	2	8	Open Water	Yes
22	Shore/Beach Diver	10	2	8	Open Water	Yes
23	Sidemount Diver	15	2	8	Open Water	Yes
24	Solo Diver	21	2	8	AOW and 100 Dives	Yes
25	Underwater Hunter and Collector Diver	10	2	8	Open Water	Yes
26	Underwater Navigation Diver	10	2	8	Open Water	Yes
27	Underwater Photographer Diver	10	2	8	Open Water	Yes
28	Underwater Video Diver	10	2	8	Open Water	Yes
29a	Wreck Diver - No penetration	10	2	8	Open Water	Yes
29b	Wreck Diver - Limited Penetration	15	3	8 - 2 during penetration	Open Water	Yes
30	Visual Inspection Procedure (VIP)	18	None	N/A	N/A	Yes

## 2. Courses AIs Can Teach

	Specialty Name	Minimum Age	Number of required dives	Student to Instructor Ratio in Open Water	Prerequisite Certification or Requirements	Certification Card must be issued by SDI
1	Advanced Buoyancy Control	10	2	8	Open Water	Yes
2	Air Fill Station Technician	18	None	N/A	N/A	Yes
3	Altitude Diver	10	2	8	Open Water	Yes
4	Boat Diver	10	2	8	Open Water	Yes
5	Computer Diver	10	2	8	Open Water	Yes
6	Equipment Specialist Diver	10	None	N/A	Open Water	Yes
7	Marine Ecosystems Awareness Diver	10	2	8	Open Water	Yes
8	Shore/Beach Diver	10	2	8	Open Water	Yes
9	Underwater Photographer Diver	10	2	8	Open Water	Yes
10	Underwater Video Diver	10	2	8	Open Water	Yes
11	Visual Inspection Procedure (VIP)	18	None	N/A	N/A	Yes

**Note:** In order to qualify to teach the programs above, Assistant Instructors must complete the appropriate instructor course, with an active SDI Course Director or Instructor Trainer, for that program.



### **3. General Specialty Standards**

The following standards apply to all SDI Diver Specialties.

#### **3.1 Administrative**

Instructors must ensure that all students complete the following forms – for each and every course and specialty the student participates in. These records must be kept for a minimum of seven years and must be completed prior to the start of the course. They are:

1. SDI Liability Release and Express Assumption of Risk Form
2. *SDI Medical Statement* Form (unless specifically not required in a non-diving course standard). If a student response on the form indicates that a physician's clearance is required for diving, the student must provide written clearance for diving without restriction from a licensed physician before participating in confined or open water training for any course or specialty training. A physician-signed medical is valid for up to 12 months with no change in medical condition unless a longer valid term is indicated on a specific medical form.
3. *SDI Diver Registration* Form or preferably register the student online in the member's section of the SDI website (upon completion of the specified program).
4. *SDI Diver Training* Record. Must be kept for a minimum of seven years.

#### **3.2 Accidents**

Hopefully a member will never have to do this; if a member were involved in an accident or simply witnessed an accident the SDI Accident Report Form must be completed by the member/witness and faxed to SDI Headquarters immediately after the accident occurred. Please refer to the SDI Standards, Part 1, section 6.4.8.

International Training strongly recommends that if any incident occurs, the dive computers are safely secured and potentially downloaded. This should be done in full cooperation with local authorities by encouraging the police, or other investigating authorities to download and preserve data from the victim's dive computer. Professional members should do this when they are giving their statements to the authorities. The professional member(s) involved in the incident must download their dive computer information and submit it with the incident report.

### **3.3**    *Definitions*

**Assistant or Assisted by** = A person who is assisting a primary and certified instructor, IT staff instructor or instructor trainer for a course that they, the "assistant", is not certified to teach. Assistants can be used for the purposes of additional supervision and to increase ratios where standards and environmental conditions allow. Assistants listed on registrations will receive experience credits for courses they have assisted with only if listed on the initial registration form.

**Co-Teach or 2nd Instructor** = A person who is certified to teach the course taking place and is working together with an also certified instructor, IT staff instructor or instructor trainer. The 2nd instructor will receive equal credit for the course if listed on the initial registration form.

**Student Prerequisites** = conditions that must be met by students prior to beginning a course. These cannot be completed during the course unless specifically outlined in the standard. Conditions listed here cannot be waived by the instructor. Written standards waivers for prerequisites may be issued by the HQ training department depending on the course, dive site, and the specific prior experience of course participants.

### **3.4**    *Equipment*

A personal dive computer (PDC) must be used during all confined and open-water training sessions, during SDI courses.

### **3.5**    *Confined Water Training*

Confined water training must be conducted in a swimming pool or a confined body of water with the following conditions:

1. Approximately 3 Metres/10 Feet of visibility.
2. Calm surface conditions.
3. Easy access to depths that allow students to stand with their head above water.
4. Depths that allow skills, as defined in the confined water lesson guide, to be adequately demonstrated.
5. Equipment that is appropriate for the training site.
6. Confined water training sites, other than pools, must be approved by SDI Headquarters.

### **3.6 Open Water Training**

The instructor, with the following considerations, must carefully choose an open water training site:

1. Body of water similar to the regional diving conditions: ocean, lake, etc.
2. Swimming pools are not considered an open water environment.
3. Water clarity.
4. Temperature above and below the water.
5. Weather conditions.
6. Water access.
7. Equipment adequate for the conditions.
8. Thermal protection appropriate for the conditions.
9. No dives are to require a decompression stop.
10. No dives will be conducted in an overhead environment unless otherwise stated.
11. A complete briefing that includes:
  - a. The dive site.
  - b. Water conditions.
  - c. Skills to be performed.
  - d. Entry/Exit to be used.
  - e. Emergency procedures.
12. A complete debriefing that includes:
  - a. Performance of divers as a whole.
  - b. Areas that need improvement.
  - c. Environmental observations.
  - d. Question and answers.

### **3.7 Student – Minimum Equipment Requirements**

**The students must have the following equipment:**

1. Mask, fins and snorkel.
2. Buoyancy compensator device (BCD) with a low-pressure power inflator.
3. Regulator with submersible pressure gauge.

4. Alternate air source.
5. Weight system.
6. Personal dive computer (PDC) unless otherwise noted.
7. Exposure suit adequate for the training conditions.
8. Compressed gas cylinder.
9. Compass; during navigation skills.
10. Rescue signal.

**Note:** Students wearing air integrated hose-less computers are not required to carry a submersible pressure gauge.

### **3.8 *Instructor – Minimum Equipment Requirements***

Unless otherwise noted, the minimum equipment requirements for training by an instructor, assistant instructor and divemaster is:

1. Mask, fins and snorkel.
2. Buoyancy compensator device (BCD) with a low-pressure power inflator.
3. Regulator with submersible pressure gauge.
4. Alternate air source.
5. Weight system.
6. Personal dive computer.
7. Exposure suit adequate for the training conditions.
8. Compressed gas cylinder.
9. Compass.
10. Cutting device.
11. Rescue signal.
12. A dive flag must be carried in accordance with local laws or regulations for all open water locations.

**Note:** Instructors wearing air integrated hose-less computers are not required to carry a submersible pressure gauge.

**Note:** Cylinder capacities used in the SDI Standards are based on manufacturer values or generalized conversions and are NOT exact conversions from metric to imperial due to variance in cylinder volume and working pressures. If you use metric cylinders, please use the metric size cylinder listed; likewise, if you use imperial cylinders, please use the imperial size cylinder listed, i.e., 3 litres/18 cubic Feet.

**Note:** Both instructor and students must wear a single cylinder back-mount configuration for the following courses: Scuba Discovery and Open Water Scuba Diver.

### **3.9 Qualification Procedures for Teaching a Specialty Course**

**To qualify to teach a specialty, the instructor must:**

1. An active teaching SDI Instructor.
2. Provide proof of 25 logged dives in the specialty being applied for.
3. Complete the *SDI Specialty Instructor upgrade Form*, agree to use the latest approved SDI Specialty outlines, and provide dive history relevant to the specialty course requested.

**OR**

1. Provide proof of 10 logged dives in the specialty being applied for.
2. Complete the relevant SDI Specialty Instructor Course with an SDI Instructor Trainer qualified as an instructor in that specialty.
3. Complete the *SDI Specialty Instructor upgrade Form* and agree to use the latest approved SDI Specialty outlines.

**Note:**

1. Some courses such as VIP courses do require a specific instructor course to be taken before the instructor may actually teach the course – reference Part 4 of the SDI Standards for such instructor courses.
2. In order to be an instructor for the SDI Solo Diver Specialty Course, the instructor must:
  - a. Minimum age 21.
  - b. Have 1 year teaching experience.
  - c. Have certified 50 or more students at various diver levels.
  - d. This rating may be obtained by administrative upgrade, or by completing a course with an SDI Solo Diver Instructor Trainer but the prerequisites must be met either way.
3. Assistant instructors and Non-Diving Specialty Instructors must complete all specialty instructor courses with an active, qualified SDI Course Director or Instructor Trainer.

### **3.10 Combining Specialties**

With the exception of SDI Deep Diver and SDI Computer Diver, none of the SDI Specialties may be combined into one program. An instructor may teach more than one specialty per day, but the courses must be taught separately.

Altitude, Boat, Computer Nitrox, Dry Suit, and Shore/Beach Divers specialties may be combined with an SDI Open Water Diver course. No other specialty course can be combined with the SDI Open Water Scuba Diver course.

The student must complete an academic review and receive the appropriate pool/confined water training prior to open water training.

To receive both the SDI Open Water Scuba Diver certification and the additional specialty certification, the student must complete 5 total scuba dives.

### **3.11 Procedure for Creating a Unique Specialty**

Instructors often create their own specialties and wish to have a certification issued by SDI. The procedures for getting a unique specialty approved are as follows.

The instructor must:

1. Be an active teaching SDI Instructor.
2. Provide proof of 25 dives in the specialty being applied for.
3. Complete the SDI Specialty Instructor upgrade Form.
4. Submit an outline, in the same format as the core SDI Specialties, for approval by SDI Headquarters.
5. SDI Headquarters must approve the outline before the course can be taught.

### **3.12 Upgrading from SDI Junior certification to full SDI**

This procedure is for divers who were initially certified with the Junior designation and are now eligible to upgrade to the full certification without age related restrictions.

Upgrade Requirements:

1. Provide verification of initial certification: certification card or formal verification letter on agency letterhead.
2. Provide verification of diving activity in the last 12 months: logbook or personal dive computer download \*.
3. Divers who are under the age of 18 must provide a letter of approval to upgrade signed by parent or legal guardian.

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\* If recent diving activity cannot be produced, diver will be directed to their nearest SDI Dive Center or equivalent to complete the Inactive Diver/Refresher program with an active Instructor.

Upon successful completion of the SDI Inactive Diver/Refresher program or equivalent, active Instructors must: provide a signed letter of update completion or signed logbook entry for Junior diver to submit to SDI World Headquarters or Regional Office.

**Processing Procedure** – Contact SDI World Headquarters or Regional Office. Submit appropriate documentation in accordance with upgrade requirements. After providing all required items and purchasing a new certification card, certification to be issued and credential sent to student.

## 4. Advanced Adventure Diver

### 4.1 *Introduction*

The purpose of this course is to give the diver an overview of 5 different specialties, 2 core, and 3 additional SDI Specialties. The two core specialties are SDI Deep and Navigation. One dive, from each of the specialties, may apply toward a complete specialty certification. Overhead environments and non-diving specialties are not allowed, and do not count toward the 3 chosen specialties. If one of the elected specialties is computer nitrox, dry suit, night-limited visibility, full face mask, DPV, search and recovery, and/or Sidemount, the instructor must hold the corresponding SDI Specialty Instructor rating. It is recommended for the student to work on advanced buoyancy during this program, it may even count as one of the five specialties required to receive the Advanced Adventure Diver rating.

### 4.2 *Who May Teach*

An active SDI Open Water Scuba Diver Instructor.

### 4.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor. It is at the instructor's discretion to reduce this number as conditions or chosen specialty dictate (unless chosen specialty dictates a lower ratio i.e., for DPV it is 2:1).
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters, unless chosen specialty states lower numbers).



#### **4.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent; juniors can only take specialties approved for their age.
5. Minimum age 18, 10 with parental consent. Junior students are to train and dive under the direct supervision of a parent, guardian, or active dive professional.

#### **4.5 Course Structure and Duration**

##### **Open Water Execution:**

1. Five dives are required with complete briefs and debriefs by the instructor.
2. One dive must be deeper than 18 Metres/60 Feet but not deeper than 30 Metres /100 Feet; *divers between the ages of 10 through 14 cannot exceed 21 Metres/70 Feet.*
3. One dive must be a navigation dive.
4. Dive plans must include surface interval, maximum no-decompression time, etc. to be figured out and logged.
5. Each dive will be the first dive of each of the specialties i.e., dive one of deep course, dive one of navigation course, etc.
6. All dives are to be under the direct supervision of an active SDI Instructor.

##### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

#### **4.6 Administrative Requirements**

##### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form.*

##### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **4.7 Training Material**

### **Required Material:**

1. *SDI Advanced Adventure Diver Manual and IQ Review Booklet* (or eLearning course)
2. *SDI Advanced Adventure Diver Instructor Guide*.

### **Optional Materials:**

1. *SDI Advanced Diver PowerPoint Presentation*

## **4.8 Required Equipment**

Basic open water scuba equipment as described in section three of this manual, and any other equipment that may apply to the chosen specialties.

## **4.9 Approved Outline**

The outline that is to be used for this specialty is an abridged version of each of the 2 core and 3 chosen specialties. The material covered must be an overview and introduction. This is just an outline and is not intended to be taught in any particular order.

### **Deep Diving:**

1. Diving Tables and Computers:
  - a. History of dive tables and computers:
    - i. No-decompression.
    - ii. Use of the decompression schedule according to your computer.
    - iii. Safety stops.
  - b. Practical problem solving.
2. Specialty equipment for deep dives:
  - a. Cylinders; different sizes.
  - b. Regulators.
  - c. Buoyancy compensator device (BCD).
  - d. Redundant gas supplies.

3. Physics and physiology for deep divers:
  - a. Special considerations for pressures greater than 3 atmospheres (ATA):
    - i. Air consumption.
    - ii. Carbon dioxide (CO<sub>2</sub>) factors.
    - iii. Nitrogen narcosis.
    - iv. Oxygen (O<sub>2</sub>) toxicity.
    - v. Decompression sickness.
4. Emergency Procedures for Deep Divers:
  - a. Usage and techniques for safety cylinders.
  - b. Recompression chamber listing for area.
5. Review of First Aid:
  - a. Oxygen treatment.
  - b. Treat for shock.

**Navigation:**

1. The Aquatic Environment:
  - a. Vision.
  - b. Light.
  - c. Sound.
  - d. Heat loss.
  - e. Tides.
  - f. Currents.
  - g. Waves.
  - h. Surge.
2. Natural Navigation:
3. Bottom contours.
4. Depth.
5. Amount of light.
6. Surge.
7. Currents.
8. Underwater objects; rocks, wrecks, etc.
9. Compass:

10. Types:
11. Analog.
12. Digital.
13. Features:
14. Lubber line.
15. Bezel.
16. Luminous dial.
17. Use of compass:
18. Out and back.
19. Squares.
20. Triangles.
21. Estimating Distance Underwater:
22. Kick cycles.
23. Time.

#### **4.10 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

1. Students must perform the skills listed for dive 1 for each of the 2 core, and 3 chosen specialties. Specific course outlines for the respective specialties are listed later in this section of the SDI Standards.

**Deep Dive:**

1. Open Water Dive 1:
  - a. Test and check all equipment, i.e., depth gauges, bottom timers/watches and computers.
  - b. Familiarization with area.
  - c. Descend to planned depth and do not exceed any pre-planned limits.
  - d. Dive according to plan at a depth limited to 30 Metres/100 Feet for first dive. *Divers between the ages of 10 and 14 cannot exceed 21 Metres/70 Feet.*
- e. Ascend to safety stop.

**Navigation Dive:**

1. Open Water Dive 1:
  - a. Skills are generally done with more success if practiced on the surface from shore. Using the shore or descent line as a starting/reference point makes keeping track of students easier.
  - b. Plan dive.
  - c. Enter water from boat or shore.
  - d. Practice out and back technique on surface.
  - e. Squares and triangles on surface.
  - f. Perform square on bottom.
  - g. Perform a triangle on the bottom.
  - h. Ascend and exit.

## 5. Advanced Buoyancy Control

### 5.1 *Introduction*

Introducing a diver to the benefits of controlling his buoyancy usually has a great positive effect, an effect that will enhance the diver's sense of enjoyment and feeling of accomplishment. This specialty is designed to increase the open water diver's understanding of the factors that influence his buoyancy, and to train the diver in using those means available to him as methods for controlling his buoyancy. The added benefits to the marine, and freshwater environments, cannot be overstated; as well as a diver that has better control of himself in conjunction with his environment.

### 5.2 *Who May Teach*

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### 5.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. A maximum of 10 students per instructor.
2. Instructors have the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 14 with the assistance of 2 active Assistant Instructors or Divemasters.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

## **5.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

## **5.5 Course Structure and Duration**

1. Confined or open water execution.
2. Two dives are required with a complete brief and debrief by the instructor.

## **5.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **5.7 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

## **5.8 Approved Outline**

**Instructors may use any additional text or materials that they feel help present these topics. The following topics must be covered:**

1. Why Do We Care About Buoyancy?
  - a. Don't touch the aquatic life; save the environment.
  - b. Less fatigue, less effort required; more fun.

- c. Reducing air consumption = more bottom time.
  - d. Able to control buoyancy = better pictures or video.
2. When Must a Buoyancy Check Be Performed?
- a. When equipment is changed.
  - b. When diving environment is changed.
  - c. Have not been diving for a while.
  - d. During every dive.
3. Buoyancy Factors:
- a. Additional equipment; Photo, video, extra cylinder, extra equipment, dive lights, etc.
  - b. Cylinder weight changes during a dive, as air is consumed from the cylinder; depending on cylinder size; 9.0 litre/63 cu ft approximately 1.35 kg/3 lbs or an 11.1 litre/80 cu ft cylinder approximately 1.52 kg/5 lbs.
  - c. Using lungs versus BCD. When using the lungs to compensate, be aware of not holding one's breath and paying attention to how much depth changes that is made, to avoid lung embolism.
  - d. Using BCD versus dry suit.
  - e. Staying physically fit.
  - f. Breathing patterns and technique:
    - i. Do not – breathe shallow.
    - ii. Do not – hold your breath.
    - iii. Do – slow down your breathing rate.
    - iv. Do – stay relaxed – go slow.
    - v. Strenuous work and stress increases breathing rate.
  - g. Compression of suit due to water pressure changes the buoyancy of the suit.
  - h. Weights – position and distribution and what impact that may have:
    - i. Horizontally, face down – weights towards sides and stomach.
    - ii. Head-up, Feet-down – weight toward middle of stomach.
    - iii. Slightly head-up, Feet-down – weight toward chest or move cylinder.



- iv. Feet rising – use light ankle weights, especially if wearing a dry suit.
- v. Weight integrated systems – benefits and restrictions.
- i. Streamlining equipment:
  - i. Minimize drag.
  - ii. Keeping equipment off the bottom.
- j. Streamlining body (body positions):
  - i. Overweight drags down lower half of body.
  - ii. Using BCD to compensate, will float upper part of body.
- k. Efficient kicking style:
- l. Practicing your skills.
- m. Weighting (salt water, use as initial guideline only – do a buoyancy check to confirm)
  - i. Swimsuit –45 kg/1 lbs to 1.2 kg/4 lbs.
  - ii. 3 mm wet suit – 5 percent body weight.
  - iii. 5 mm wet suit – 10 percent of body weight.
  - iv. Cold-water suit with hood – 10 percent of body weight, plus 1 to 2.5 kg/3 to 5 lbs.
  - v. Dry suit – 10 percent of body weight, plus 3 to 4.5 kg/7 to 10 lbs.
- n. How to perform a standard buoyancy check, with an almost empty cylinder:
  - i. Wear all equipment and normal amount of weight.
  - ii. Enter water to deep to stand in.
  - iii. Deflate BCD completely.
  - iv. Hang vertical and motionless, breathe in, and hold a normal breath at the surface.
  - v. Adjust weight until floating at eye level.
  - vi. Exhale - must sink slowly.

## **5.9 Required Skill Performance and Graduation Requirements**

**Dives can either be performed in a pool or in open water. Students are required to successfully complete the following:**

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1. Dive 1:
  - a. Assembling dive equipment; use an almost empty cylinder, approximately 34 bar/500 psi in the cylinder.
  - b. Pre-dive check and enter water to deep to stand in.
  - c. Perform a pre-dive buoyancy check with an almost empty cylinder.
  - d. Adjust weight to achieve correct buoyancy:
    - i. Step 1: student takes a 1 kg/2 lbs weight off, to illustrate underweight.
    - ii. Step 2: student adds 2 kgs/4 lbs of weight, to illustrate overweight.
    - iii. Step 3: student removes 1 kg/2 lbs of weight off, to achieve neutral buoyancy.
  - e. Change cylinder and use a full cylinder.
  - f. Do a pre-dive buoyancy check with full cylinder.
  - g. Controlled descent.
  - h. Hovering exercises:
    - i. Hover stationary without use of hands or fins.
    - ii. Fine-tune with breath control.
    - iii. Fine-tune with BCD or dry suit.
    - iv. Close to bottom exercises, no touch.
    - v. Perform skills from the Open Water course, as directed by the instructor, while neutrally buoyant.
  - i. Swimming exercises.
  - j. Ascent that includes a safety stop hovering; simulate safety stop if in pool.
  - k. Log dive, noting the amount of weight used.
2. Dive 2
  - a. Change to a full cylinder.
  - b. Do a pre-dive buoyancy check with the full cylinder.
  - c. Controlled descent.
  - d. Hovering exercises:
    - i. Fine-tune with breath control.

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- ii. Fine-tune with BCD or dry suit.
    - iii. Close to bottom exercises, no touch.
  - e. Swimming exercises.
  - f. Ascent that includes a safety stop hovering; simulate safety stop if in pool.
3. Log dive, noting the amount of weight used.

## **6. Air Fill Station Technician Course**

### **6.1 Introduction**

This course is designed to promote safety in the filling of compressed gas cylinders with air. The objective of this course is to train and test candidates in the proper procedures for filling compressed gas cylinders with air.

**It is important that the student understands that a requalification course is required every 2 years.**

### **6.2 Qualifications of Graduates**

1. Upon successful completion of this course graduates may handle, transport, externally inspect and fill compressed gas cylinders with air.

### **6.3 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty by SDI.

### **6.4 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

### **6.5 Student Prerequisites**

1. Minimum age 18.

### **6.6 Course Structure and Duration**

#### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level,

#### **Duration:**

1. The recommended number of classroom and briefing hours is 2.

## **6.7 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Non-scuba General Liability Release and Express Assumption of Risk Form*

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **6.8 Required Equipment**

1. *Visual Inspection Procedures* student manual or eLearning.
2. Air Fill Station Technician Knowledge Quest.
3. SDI Air Fill Station Technician PowerPoint.
4. Air Fill Station and/or Fill Compressor.
5. Scuba Cylinders for filling.

## **6.9 Approved Outline**

**Instructors may use any additional text or materials that they feel help present these topics.**

### **The following topics must be covered during this course:**

1. The Responsibility of the Fill Station Technician.
2. Main Cause of Accidents.
3. Risks and Hazards:
  - a. Cylinder failure.
  - b. Fill Whip Failure.
4. Safe Operating Basics.
5. Breathing Grade Air definition.

6. Air Quality Factors and Contaminants:
  - a. Carbon dioxide.
  - b. Carbon monoxide.
  - c. Hydrocarbons/Oil mist.
  - d. Water vapor.
7. Air Analysis:
  - a. Procedures.
  - b. Testing systems.
  - c. Local requirements.
8. Air Fill Production Equipment:
  - a. Compressors.
  - b. Storage cylinders.
  - c. Filtration systems.
  - d. Valves.
  - e. Fill adapters.
  - f. Analog and digital gauges.
  - g. Fill whips.
9. Safety Systems:
  - a. Fill whip restraints.
  - b. Cylinder valve burst disks.
  - c. Pressure limiting master valves.
  - d. Air panel overpressure relief valves.
  - e. Flow limiting devices.
  - f. Cylinder restraint systems.
  - g. Cylinder filling tubs.
  - h. Cylinder filling containment systems.
10. Fill Station Systems:
  - a. Direct from compressor.
  - b. Fill panels.
  - c. Fill station design.
  - d. Testing and certification.

11. Proper Cylinder Handling:
  - a. Fill station technician rules and recommendations.
  - b. Cylinder construction.
  - c. Identification of the various cylinder markings.
  - d. Testing requirements:
    - i. Hydrostatic.
    - ii. VIP and similar stickers/markings.
    - iii. Eddy current.
  - e. Inspection of cylinders.
  - f. Inspection of valves.
  - g. Banned and failed cylinders.
12. Air Filling Procedures:
  - a. General considerations.
  - b. Maintaining safe filling conditions.
  - c. Filling from pre-filled banks.
  - d. Filling direct from compressor.
  - e. Storage.
  - f. Fill technician safety.
  - g. Record keeping:
    - i. Compressor hours.
    - ii. Filtration hours.
    - iii. Fill logs.
  - h. What to do if you get bad air.
13. What's Next?
  - a. TDI Nitrox Gas Blender.
  - b. TDI Advanced Gas Blender.
  - c. TDI Oxygen Service Technician.
  - d. SDI VIP Inspector.

## **6.10 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

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1. Candidates must successfully fill 5 cylinders with air following the safety practices covered in the course.
2. Candidates must log fills in an air fill log.
3. Demonstrate an understanding of air filling techniques, contaminated air identification and safe cylinder handling.
4. Successfully pass the SDI Air Fill Station Technician knowledge quest with a minimum score of 80%.



## **7. Altitude Diver**

### **7.1 Introduction**

The purpose of this course is to acquaint a diver with the necessary procedures and knowledge to safely dive at altitudes above sea level.

### **7.2 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### **7.3 Student to Instructor Ratio**

#### **Academic**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions)**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary)**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **7.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent, or current enrollment in one of those courses.
2. Minimum age 18, 10 with parental consent.

### **7.5 Course Structure and Duration**

#### **Open Water Execution**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. Dive plans must include surface interval, maximum no-decompression.

### **Course Structure**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **7.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **7.7 Required Equipment**

Basic open water scuba equipment as described in section three in this manual.

## **7.8 Approved Outline**

### **The following topics must be covered during this course:**

1. Why we do This Type of Diving?
2. Dive Tables as They Relate to Altitude Diving:
  - a. DCIEM Tables.
  - b. Bühlmann Tables.
  - c. Cross Corrections to United States Navy (USN) Tables.
3. Computers:
  - a. Computer's capability and usage.
4. Calculations Based on Cross Corrections to USN Tables:

- a. Usage:
    - i. Actual depth of dive.
    - ii. Altitude of dive site.
    - iii. Ascent rate is adjusted.
  - b. Examples of problems.
  - c. Last dive and travel at higher altitudes.
5. Correction of Depth Gauges and Computers:
- a. Gauges designed for 1 atmosphere (ATM).
  - b. Capillary depth gauge will reflect the actual depth.
  - c. If there is any doubt use measured down line.
6. Hypoxia During Altitude Diving.
7. Levels of Altitude:
- a. 300 Metres/1000 Feet.
  - b. 1200 Metres/4000 Feet, etc.

## **7.9 Required Skill Performance and Graduation Requirements**

Although not desirable, the training sessions may be carried out at sea level for those students who may be too distant from high altitude dive sites.

### **Students are required to successfully complete the following skills:**

- 1. Open Water Dive 1:
  - a. Plan dive.
  - b. Students compute their no-decompression information.
  - c. Test and check all equipment, i.e., depth gauges and bottom timers/watches and computers.
  - d. Enter and descend.
  - e. Monitor depth and no-decompression time.
  - f. Ascend.
  - g. Log dive.
- 2. Open Water Dive 2:
  - a. Descend.
  - b. Monitor depth/time on slate.

- c. Compass usage.
- d. Treasure hunt or some other activity for fun.
- e. Ascend.
- f. Log dive.

## 8. Boat Diver

### 8.1 *Introduction*

Scuba diving from boats is an everyday occurrence. Whether on a private vessel or one of the many charter dive boats available worldwide, divers are frequently not aware of the special procedures and etiquette used when boat diving. This course is designed to introduce divers to different types of boat diving and the skills needed to plan and conduct a boat dive with maximum safety.

### 8.2 *Who May Teach*

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### 8.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### 8.4 *Student Prerequisites*

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent or current enrollment in one of those courses.
2. Minimum age 18, 10 with parental consent.

## **8.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.
3. All dives must be completed from a boat.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **8.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk* Form
  - b. *SDI Medical Statement* Form.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration* Form to SDI Headquarters or registering the students online through member's area of the SDI website.

## **8.7 Training Material**

### **Required Material:**

1. *SDI Wreck, Boat, and Drift Diving* Manual.
2. *SDI Wreck, Boat, and Drift Diving* Scuba I.Q.
3. *SDI Wreck, Boat, and Drift Diving* Instructor Guide.

## **8.8 Required Equipment**

1. Boat equipped with proper safety equipment, including but not limited to oxygen and first aid kit.
2. Basic open water scuba equipment as described in section three of this manual.

## **8.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered:

1. Types of Boats and Features of Those Boats:
  - a. Live-aboard.
  - b. Charter boat.
  - c. Private boat.
2. Safety Features:
  - a. Life preservers.
  - b. Lifeboats.
  - c. Flares.
  - d. Radio.
  - e. Throw rings.
  - f. US Coast Guard requirements.
  - g. First aid kit.
  - h. Oxygen kit.
3. Exiting and Boarding the Boat:
  - a. Type of ladder.
  - b. How to use ladder.
  - c. Entries.
4. Planning Boat Trips:
  - a. Types and sizes of boats.
  - b. Location.
  - c. Degree of difficulty of dives.
  - d. Air availability on boat.

- e. Food/beverages available.
  - f. Sleeping equipment necessary.
  - g. Weather.
  - h. Dive planning.
5. Determining Necessary Equipment:
- a. Use of a checklist.
  - b. C-card and logbook.
  - c. Extra cylinder.
  - d. All open water equipment.
  - e. Spare parts kit.
  - f. Camera/photo equipment.
  - g. Game equipment.
6. Boat Procedures:
- a. Loading.
  - b. Captain and crew briefs of special procedures.
  - c. Special rules.
  - d. Crowded area procedures.
7. Lines:
- a. Anchor line.
  - b. Descent lines.
  - c. Tag line.
  - d. Stern safety line.
  - e. Decompression bar.
8. Underwater Navigation from a Boat:
- a. Natural navigation.
  - b. Anchored:
    - i. No current.
    - ii. Current.
  - c. Drift diving.



## **8.10 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Plan dive.
  - b. Shore briefing.
  - c. Review of procedures.
  - d. Captain's brief and travel to dive destination.
  - e. Entry.
  - f. Diving procedures.
  - g. Exit.
  - h. Log dive.
  - i. Care of equipment.
2. Open Water Dive 2:
  - a. Attempt to use a different type of boat or, at least, use a different entry point from the boat.
  - b. Plan dive.
  - c. Pre-dive briefing.
  - d. Review procedures.
  - e. Boat briefing and travel to dive destination.
  - f. Entry.
  - g. Planned dive.
  - h. Exit.
  - i. Log dive.
  - j. Care of equipment.

## 9. Computer Diver

### 9.1 *Introduction*

This course is designed to expand a diver's knowledge in the use of their personal dive computer (PDC) and is primarily intended for divers who are certified with agencies using traditional dive tables for planning, rather than PDCs throughout training.

### 9.2 *Who May Teach*

1. An active SDI Open Water Scuba Diver Instructor.
2. An Assistant Instructor that has been certified to teach this specialty.

### 9.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### 9.4 *Student Prerequisites*

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

## **9.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.
2. This course may be combined with the SDI Deep Diver Specialty only.

## **9.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **9.7 Training Material**

### **Required Material:**

1. *SDI Deeper Diving with Dive Computers Student Manual*.
2. *SDI Deeper Diving with Dive Computers Scuba I.Q. Review*.
3. *SDI Deeper Diving with Dive Computers Instructor Guide*.

## **9.8 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.

## **9.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered:

1. Computers vs. Tables:
  - a. History of tables.
  - b. Computer advantages.
  - c. Different decompression models.
2. Decompression Sickness:
  - a. Cause:
    - i. Tissue compartments.
  - b. Signs and symptoms.
  - c. Treatment.
  - d. First aid.
  - e. Prevention.
3. Types of Diving Computers:
  - a. Air integrated.
  - b. Non-air integrated.
  - c. Features:
    - i. Start up.
    - ii. Display screen.
    - iii. Dive planner.
    - iv. Decompression planner.
    - v. Algorithm.
    - vi. Dive time.
    - vii. Max depth.
    - viii. No stop time.

- ix. Ascent warning, audible or visual.
  - x. De-saturation time.
  - xi. Time to fly.
  - xii. Surface interval.
  - xiii. Altitude compensation.
  - xiv. Lighting.
  - xv. Battery life indicator.
  - xvi. Downloadable.
4. How Dive Computers Work:
- a. Decompression information in permanent memory.
  - b. Pressure transducer reads ambient pressure.
  - c. Internal clock records lapsed dive or surface time, updates frequently, usually every second.
  - d. Information is calculated in the computer microprocessor during each update.
  - e. Information is displayed on screen.
  - f. The User is responsible for interpreting information.
5. Use of Dive Computers:
- a. Always read the manual first.
  - b. Start-up procedures.
  - c. Operating instructions.
  - d. Ascent rates.
  - e. Other information.
6. Definitions.
- a. Dive time - Elapsed time from beginning of descent until final surfacing at end of dive.
  - b. Time remaining - Available time, according to the computer program, that diver may remain at current depth without incurring mandatory decompression; increases as depth decreases.
7. Planning Multi-Level Repetitive Dives:
- a. Dive planning mode.
  - b. First dive or repetitive dive.

8. Only One Diver per Computer:
  - a. Very unsafe practice for two divers to attempt to monitor dive profiles with one computer.
9. Emergency Procedures:
  - a. Decompression.
    - i. Decompression dives require additional training.
  - b. Omitted decompression.
    - i. Usually prevented by voluntary safety stop.
    - ii. Usually caused by failure to monitor air supply or computer.
  - c. Ascent rates.
  - d. Computers varying ascent rates determined by the manufacturer.
  - e. Computer failure:
    - i. Make a normal ascent with a safety stop, then exit.
    - ii. If a diver is dependent upon one dive computer for decompression data, they must remain out of water for 24 hours minimum before resuming diving after computer failure.

### ***9.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. This dive must be conducted to a specified depth that is appropriate to the dive site.
  - b. Instructor and student must prepare a suitable multi-level profile for this dive.
  - c. It is important for the diver to monitor depth, buoyancy control, and air supply. For example, if the dive is projected for 21 Metres/70 Feet maximum depth; the diver must then monitor his depth and not exceed the planned maximum depth.
  - d. An appropriate safety stop must be included at the end of the dive.
2. Open Water Dive 2:
  - a. The second dive must be conducted in the same fashion as dive 1 with the exception that the dive profile is prepared by the student and submitted to the instructor for approval.
  - b. Monitor depth, buoyancy control, and air supply.

- c. Post Dives.
- d. After completing the 2 dives the students must download their computers if they have the capability.
- e. Instructors must review this information with the students.

## 10. Computer Nitrox Diver

### 10.1 *Introduction*

The SDI Computer Nitrox course is designed to teach open water divers how to use nitrox mixtures up to 40 percent with the aid of a nitrox programmable dive computer.

### 10.2 *Qualification of Graduates*

Upon successful completion of this course, graduates may conduct open circuit dives utilizing a dive computer with a single gas of no greater than 40 percent oxygen and not requiring decompression. The training program does not qualify divers to make dives which require mandatory in-water decompression stops or dives using more than one breathing gas and/or rebreathers.

### 10.3 *Who May Teach*

An active SDI Instructor that has been certified to teach this specialty. Proof of certification at the diver level is required to upgrade administratively or to take a specialty instructor course for this specialty.

### 10.4 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. N/A.

### 10.5 *Student Prerequisites*

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.



## **10.6 Course Structure and Duration**

### **Open Water Execution:**

1. No dives are required.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **10.7 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*..

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.
2. If taught in conjunction with the SDI Open Water course, the students should be registered as Open Water Scuba Divers prior to registering them as Computer Nitrox divers.

## **10.8 Training Material**

### **Required Material:**

1. *SDI Computer Nitrox Manual and Knowledge Quest* or online course.
2. *SDI Computer Nitrox Digital Instructor Resource*.

### **Suggested materials:**

1. *SDI EAD Table*.

## **10.9 Required Equipment**

1. Nitrox Cylinder.
2. Air cylinder for calibration.
3. Oxygen analyzer.
4. Sample nitrox log.

## **10.10 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. History of Enriched Air Nitrox (EAN).
2. Physiology:
  - a. Oxygen (O<sub>2</sub>).
  - b. Nitrogen (N<sub>2</sub>).
3. Equipment Considerations:
  - a. Less than 40 percent oxygen content.
  - b. More than 40 percent oxygen content.
4. Dive Computers:
  - a. Mix adjustable.
  - b. Air integrated.
  - c. Nitrox programmable dive computer.
5. Advantages and Disadvantages:
  - a. Use of nitrox for physiological advantage with a nitrox programmable dive computer.
  - b. Use to extend no-decompression time or shorten surface intervals.
  - c. Oxygen toxicity hazards and depth limits.
  - d. Discussion of myths and facts regarding enriched air nitrox (EAN) mixtures.
6. Equivalent Air Depth (EAD):
  - a. Introduction to the concept only for demonstration.
7. Procedures:
  - a. Use and theory of oxygen analyzer.

- b. Gas analysis and logging.
- c. How to complete and sign a fill station's EAN fill log, including MOD and oxygen content.

### ***10.11 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Students must achieve a minimum score of 80% on the Knowledge Quest or online final exam with 100% remediation.
2. Analyze at least 2 nitrox cylinders and label cylinders in accordance with local practices and/or regulations.
3. Log at least 1 nitrox cylinder analysis to include: MOD and oxygen content.
4. Program a nitrox computer to a mix between 22-40 percent oxygen.

## **11. Deep Diver**

### **11.1 Introduction**

The purpose of this course is to provide the necessary training to plan and execute dives that are outside the range of depths that are experienced during an SDI Open Water Scuba Diver course, specifically beyond 18 Metres/60 Feet and to a maximum depth of not greater than 40 Metres/130 Feet.

### **11.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **11.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 4 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 8 with the assistance of 2 active Assistant Instructors or Divemasters.

### **11.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

## **11.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.
3. Divers between the ages of 10 through 14 cannot exceed 21 Metres/70 Feet.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.
2. This course may be combined with the SDI Computer Diver Specialty, and only that specific specialty.

## **11.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **11.7 Training Material**

### **Required Material:**

1. *SDI Deeper Diving with Dive Computers Student Manual and Knowledge Quest* (or eLearning course)
2. *SDI Deeper Diving with Dive Computers Digital Instructor Resource*.

## **11.8 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

## **11.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

### **The following topics must be covered.**

1. Diving Tables and Computers:
  - a. History of dive tables and computers:
    - i. No-decompression.
    - ii. Use of the decompression schedule according to your computer.
    - iii. Safety stops.
  - b. Practical problem solving.
2. Equipment:
  - a. Specialty equipment for deep dives:
    - i. Cylinders, different sizes.
    - ii. Regulators.
    - iii. Buoyancy compensator device (BCD).
    - iv. Lift bags.
    - v. Reels.
    - vi. Redundant gas supplies.
  - b. Physics and physiology for deep divers:
    - i. Special considerations for pressures greater than 3 atmospheres (ATA):
      1. Air consumption
      2. Carbon Dioxide (CO<sub>2</sub>) factors.
      3. Nitrogen narcosis.
      4. Oxygen (O<sub>2</sub>) toxicity.
      5. Decompression sickness.
3. Emergency Procedures for Deep Divers:
  - a. Usage and techniques for safety cylinders.

- b. Recompression chamber listing for area.
- 4. Review of First Aid:
  - a. Oxygen (O<sub>2</sub>) treatment.
  - b. Treat for shock.

### ***11.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Test and check all equipment, i.e., depth gauges, bottom timers/watches and computers.
  - b. Familiarization with area.
  - c. Descend to planned depth and do not exceed any pre-planned limits.
  - d. Dive according to plan at a depth limited to 30 Metres/100 Feet for the first dive.
  - e. Monitor depth/time/air consumption, figure all times on slate.
  - f. Monitor/test for nitrogen narcosis.
  - g. Ascend to safety stop.
2. Open Water Dive 2:
  - a. Monitor depth/time/air consumption, figure all times on slate.
  - b. Descend to planned depth and do not exceed any pre-planned limits.
  - c. Monitor/test for nitrogen narcosis.
  - d. Execute a simulated emergency that is to be assigned underwater by the instructor.
  - e. Dive according to plan at a depth limited to 40 Metres/130 Feet.
  - f. Ascend to safety stop.

## **12. Diver Propulsion Vehicle (DPV)**

### **12.1 Introduction**

This course is designed to train divers in the use of a diver propulsion vehicle (DPV) and familiarizes them with the skills, knowledge, planning, organization, procedures, techniques, problems, and hazards of using a DPV in a non-overhead environment.

### **12.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **12.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 2 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

### **12.4 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 with parental consent.

### **12.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.



**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **12.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **12.7 Required Equipment**

**Required Material:**

1. Basic open water scuba equipment as described in section three of this manual.
2. Diver Propulsion Vehicle.

## **12.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

**The following topics must be covered.**

1. Physics:
  - a. Pressure review.
  - b. Review of air embolisms and decompression theory.
  - c. Review of ascents/descents with regards to pressure changes.
  - d. Review dive tables and computers.

- e. Diver propulsion vehicle (DPV) considerations.
- 2. Advantages of Using a Diver Propulsion Vehicle (DPV):
  - a. Features to consider when choosing a DPV.
  - b. Types of DPVs.
  - c. Accessories.
- 3. Overview of DPVs Used for This Course:
  - a. Maximizing battery life.
  - b. Battery safety tips.
  - c. Maintenance; storing and transporting.
  - d. Dive planning and safety considerations.
  - e. Air consumption and decompression.
  - f. Battery endurance.
  - g. Determining the turn-around time point.
- 4. Safety Considerations:
  - a. Vehicle failure.
  - b. Depth and descent/ascent considerations.
  - c. Avoiding propeller entanglements and obstructions.
  - d. Using the Buddy System.
- 5. Diver Propulsion Vehicle (DPV) Use:
  - a. Pre-dive preparation.
  - b. Water entries.
  - c. DPV use at the surface.
  - d. Riding tandem.
  - e. Orientation and descent procedures.
  - f. Ascent and exit procedures.
  - g. Post dive maintenance.

## ***12.9 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

- 1. Open Water Dive 1:
  - a. Dive plan.

- b. Proper entry.
  - c. Surface use of DPV.
  - d. Descent with DPV.
  - e. Monitor DPV and air consumption.
  - f. Ascent and exit.
  - g. Log dive.
2. Open Water Dive 2:
- a. Dive plan.
  - b. Entry and descent.
  - c. Underwater tour.
  - d. Ascent and exit.
  - e. Log dive.

## **13. Drift Diver**

### **13.1 Introduction**

This course is designed to teach divers the skills, knowledge, and necessary techniques to properly conduct drift dives.

### **13.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **13.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **13.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

### **13.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. Both dives must be done as drift dives.
3. Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

### **13.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

### **13.7 Training Material**

**Required Material:**

1. *SDI Wreck, Boat and Drift Diving Student Manual*.
2. *SDI Wreck, Boat and Drift Diving Scuba I.Q. Review*.
3. *SDI Wreck, Boat and Drift Diving Student Manual*

### **13.8 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

### **13.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered:

1. The Aquatic Environment: Causes and Effects:
  - a. Tides.
  - b. Currents.
  - c. Waves.
  - d. Surge.
2. Equipment:
  - a. Floats.
  - b. Lines.
  - c. Reels.
  - d. Compass.
3. Planning and Procedures:
  - a. Buddy organization.
  - b. Problems and hazards.
  - c. Buoyancy control.
  - d. Navigation.
  - e. Communications.
  - f. Safety stop procedures.
  - g. Entries and exits.

### ***13.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. The first dive must not be greater than 18 Metres/60 Feet and the instructor must guide it.
  - b. The instructor must demonstrate the proper use of a float, lines, and reels.
2. Open Water Dive 2:
  - a. The second dive must have the students planning, demonstrating, and executing the skills learned from the first dive.

## 14. Dry Suit Diver

### 14.1 Introduction

This course allows the student to develop knowledge and skills to properly use a dry suit. It will discuss the types of dry suits, accessories, maintenance and how to make basic repairs.

### 14.2 Who May Teach

An active SDI Instructor that has been certified to teach this specialty. Proof of certification at the diver level is required to upgrade administratively or to take a specialty instructor course for this specialty.

### 14.3 Student to Instructor Ratio

#### Academic:

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### Pool/Confined Water (swimming pool-like conditions):

1. A maximum of 6 students per instructor.

#### Open Water (ocean, lake, quarry, spring, river, or estuary):

2. A maximum of 4 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
3. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
4. The total number of students an instructor may have in the water is 8 with the assistance of 2 active Assistant Instructors or Divemasters.

### 14.4 Student Prerequisites

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 12 with parental consent.

### 14.5 Course Structure and Duration

#### Pool/Confined Water/Shallow Open Water:

1. A single required session in pool, confined water or shallow open water to cover weighting, buoyancy control, ascents/descents, and emergency procedures must be completed prior to open water dives.

**Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **14.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **14.7 Training Material**

**Required Material:**

1. *SDI Dry Suit Student Manual and Knowledge Quest or eLearning*.
2. *SDI Dry Suit Digital Instructor Resource*.

## **14.8 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.



2. Dry suit with inflator hose.

## **14.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Types of Dry Suits:
  - a. Shell style.
  - b. Crushed neoprene.
  - c. Neoprene.
2. Types of seals:
  - a. Latex.
  - b. Neoprene.
3. Features:
  - a. Self-don.
  - b. Rear entry.
  - c. Boots.
  - d. Zipper guard; protect waterproof zipper from chaffing.
  - e. Warm neck collar.
  - f. Suspenders.
4. Dive Wear Insulation:
  - a. Cut to be close to skin.
  - b. Compression-resistant.
  - c. Dive wear is primarily made of polyester fibers or polypropylene.
5. Dry Suit Valves:
  - a. Inflator:
    - i. Push to inflate.
    - ii. To maintain the air space created by the dry suit.
  - b. Deflator:
    - i. Push to dump an adjustable.
    - ii. Simple open and close system.
6. Buoyancy Control:

- a. Proper weighting:
    - i. Cylinders and weights.
    - ii. Weight integrated buoyancy compensator device (BCD).
    - iii. Harness system.
  - b. Maintaining neutral buoyancy underwater.
  - c. Dry suit is not a substitute for a proper BCD.
7. Maintenance and Care:
- a. Flush with fresh water.
  - b. Dry inside first.
  - c. Avoid heat, chemicals and oils.
  - d. Zipper care:
    - i. Clean inside and out (toothbrush).
    - ii. Use only paraffin wax, never silicon spray.
  - e. Minor Repairs:
    - i. Repair from inside out.
    - ii. 50/50 mix Cotol-240 and Aquaseal.
  - f. The use of water-soluble lubricants inside wrist seals to ease wear and tear on wrist seals while donning the suit.
8. Dry Suit Emergencies:
- a. Excessive air in suit.
  - b. Inflator valve stuck open or leaking air.
  - c. The exhaust valve stuck closed.
  - d. Accidentally dropped weight.
  - e. Excessive air in Feet.
  - f. Dry suit flooded.

### ***14.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

- 1. Pool Session 1:
  - a. Plan dive.
  - b. Proper donning of dry suit.

- c. Review functions and features of dry suit.
- d. Enter water.
- e. Buoyancy check.
- f. Get comfortable.
- g. Descend.
- h. Practice dry suit skills.
- i. Inflating and deflating suit.
- j. Roll from inverted position.
- k. Buoyancy skills/hovering.
- l. Ascend and exit.

**Students are required to successfully complete the following in open water:**

1. Open Water Dive 1:
  - a. SDI recommends that the first dive be no deeper than 6 Metres/20 Feet.
  - b. Plan dive.
  - c. Proper donning of dry suit.
  - d. Review functions and features of dry suit.
  - e. Enter water from a boat or shore.
  - f. Buoyancy check
  - g. Get comfortable.
  - h. Descend.
  - i. Practice dry suit skills.
  - j. Inflating and deflating suit.
  - k. Roll from inverted position.
  - l. Ascent with safety stop.
  - m. Ascend and exit.
  - n. Log dive.
2. Open Water Dive 2:
  - a. Plan dive.
  - b. Enter and descend.
  - c. Practice dry suit skills.

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- d. Inflating and deflating suit.
- e. Roll from inverted position.
- f. Emergency procedures for a dry suit malfunction.
- g. Ascend with safety stop.
- h. Exit, log dive.

## **15. Equipment Specialist**

### **15.1 Introduction**

This course is designed to give a more in-depth look at how dive equipment works. It will cover general repairs and maintenance of various types of exposure suits, BCD's, regulators, and other accessories.

### **15.2 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### **15.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. N/A.

### **15.4 Student Prerequisites**

1. Minimum age 18, 10 with parental consent.

### **15.5 Course Structure and Duration**

1. No Open Water dives are required.
2. SDI allows instructors to structure courses according to the number of students participating and their skill level.

### **15.6 Administrative Requirements**

#### **Administrative Tasks:**

1. Collect the course fees from all the students.

2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Non-Scuba General Liability Release and Express Assumption of Risk Form*

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

### **15.7 Required Equipment**

Different equipment must be available for demonstration purposes.

### **15.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Exposure Suits:
  - a. Dry suit:
    - i. How they work.
    - ii. Types of materials they are made of.
    - iii. Features.
    - iv. Basic repairs.
    - v. Care and maintenance.
    - vi. Choosing a dry suit is best for you.
  - b. Wetsuit:
    - i. How it works.
    - ii. Types of materials they are made of.
    - iii. Features.
    - iv. Wet suit accessories i.e., gloves, hood.
    - v. Basic repairs.
    - vi. Care and maintenance.

- vii. Choosing a wet suit best for you.
2. Buoyancy Compensator Devices:
    - a. How they work.
    - b. Types of materials they are made of.
    - c. Features.
    - d. Basic repairs.
    - e. Care and maintenance.
    - f. Choosing a BCD that is best for you.
  3. Regulators and Alternate Air Sources:
    - a. How they work.
    - b. Types of materials they are made of.
    - c. Features.
    - d. Basic repairs.
    - e. Care and maintenance.
    - f. Choosing a regulator that is best for you.
  4. Cylinders:
    - a. How they work.
    - b. Types of materials they are made of.
    - c. Features.
    - d. Basic repairs.
    - e. Care and maintenance.
    - f. Transportation.
    - g. Choosing a cylinder that is best for you.
  5. Weight Systems:
    - a. How they work.
    - b. Types of materials they are made of.
    - c. Features.
    - d. Basic repairs.
    - e. Care and maintenance.
    - f. Transportation.
    - g. Choosing a weight system that is best for you.

6. Computers and other Instruments:
  - a. How they work.
  - b. Features.
  - c. Basic repairs.
  - d. Care and maintenance.
  - e. Transportation.
  - f. Choosing a computer that is best for you.
7. Accessories:
  - a. Knives and cutting devices.
  - b. How to use one.
  - c. Features.
  - d. Basic repairs.
  - e. Care and maintenance.
  - f. Transportation.
8. Various Equipment Carrying Devices:
  - a. Types.
  - b. Features.
  - c. Basic repairs.
  - d. Care and Maintenance.
  - e. Transportation.

### ***15.9 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Pass an exam the instructor has developed to check the learning by the student and how well the student has comprehended the material.



## **16. Full Face Mask Diver**

### **16.1 Introduction**

The purpose of this course is to train divers with the necessary procedures, knowledge and skills to safely dive with a full-face mask.

### **16.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **16.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. A maximum of 8 students per instructor.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

### **16.4 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 with parental consent.

### **16.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.

#### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **16.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **16.7 Training Material**

### **Optional Materials:**

1. *ERDI Full Face Mask Student Manual* or eLearning.
2. *ERDI Full face Mask Knowledge Quest* or eLearning.
3. *ERDI Full Face Mask Instructor Guide*.

## **16.8 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

## **16.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics. The following topics must be covered.

### **The following topics must be covered during this course:**

1. Purpose:
  - a. Diver safety.
  - b. Communications.
2. Advantages:

- a. Increased diver safety:
    - i. Contaminated water.
    - ii. Winter diving.
  - b. Communications.
  - c. Corrective lenses.
3. Disadvantages:
- a. Increased air consumption.
  - b. Buoyancy.
  - c. Bulky.
4. Types:
- a. Appropriate/Inappropriate.
  - b. Scuba quick connect/disconnect.
  - c. Surface supplied.
5. Techniques/Procedures:
- a. Donning:
    - i. In water vs. out of water.
    - ii. Strap adjustment.
    - iii. Skirt seal.
  - b. Diving with a full-face mask:
    - i. Equalization.
    - ii. Buoyancy.
    - iii. Removal and replacement underwater.
    - iv. Alternate air source use.
    - v. Spare mask.
    - vi. Surface options.
    - vii. Surface valve.
6. Underwater Communications:
- a. Types of communication equipment:
    - i. Push-to-talk (PTT).
    - ii. Voice activated (VOX).
    - iii. Hardwire/Tether.

- iv. Battery Failure.
- 7. User/Field Maintenance and Care.
- 8. Authorized servicing/preventive maintenance.
- 9. After use.

### ***16.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Dive plan.
  - b. Equipment setup.
  - c. Proper weighting.
  - d. Equalization techniques.
  - e. Clearing a partially flooded mask.
  - f. Remove and replace full face mask underwater.
  - g. Ascent and exit.
  - h. Log dive.
2. Open Water Dive 2:
  - a. Dive plan.
  - b. Remove mask and utilize alternate air source.
  - c. Alternate air source ascent.
  - d. Ascent and exit.
  - e. Log dive.
  - f. Proper donning and adjustment.
  - g. Establish buoyancy and demonstration of buoyancy control.
  - h. Successfully switch to a backup mask.
  - i. On the surface switching from open to close.
  - j. Free Flowing Full-Face Mask.

## 17. Ice Diver

### 17.1 *Introduction*

Ice diving can be a serene and beautiful aspect of scuba diving. As a winter activity, ice diving offers the diver the opportunity to enjoy sport diving year-round. Diving under ice presents hazards not common to the open water diver and special training is required. The purpose of this course is to acquaint the diver with many of the hazards associated with ice diving and how to plan and execute an ice dive.

### 17.2 *Who May Teach*

1. An active SDI Instructor that has been certified to teach this specialty.
2. Proof of certification at the diver level is required to upgrade administratively or to take a specialty instructor course for this specialty.

### 17.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 2 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

### 17.4 *Student Prerequisites*

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18.

### 17.5 *Course Structure and Duration*

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. The Dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **17.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **17.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. Dry suit, recommended with prior certification required.
3. A Regulator tested at low temperature.
4. Harness.
5. Lines.
6. Lights, as required.
7. Cold weather surface support equipment.
8. Hole-cutting equipment.

## **17.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

**The following topics must be covered.**

1. Effects of the Cold:
  - a. Physiological aspects of cold-water diving.
  - b. Emergency aspects of cold-water diving.
  - c. Special first aid for cold exposure.
2. Equipment for Ice Diving:
  - a. Harness.
  - b. Lines.
  - c. Dry suit.
  - d. Hole-cutting equipment.
3. Surface Support Procedures:
  - a. Duties and responsibilities.
  - b. Hole-cutting techniques.
  - c. Lines and securing.
  - d. Line tending.
  - e. Communications.
  - f. Signals.
  - g. Ice spokes.
  - h. Lost diver procedures.
  - i. Safety diver:
    - i. Equipment for the safety diver.
    - ii. Search and Recovery trained.
  - j. Broken line procedures.
4. Navigation.
5. Diving Lights and Their Care.

### **17.9 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Review of scuba skills on land.
  - b. Test lights and equipment.

- c. Set up shelter.
  - d. Cut hole in ice and secure.
  - e. Dive plan.
  - f. Descent and line considerations on land.
  - g. Line handling and short line signals on land.
  - h. Ten-minute familiarization.
  - i. Enter.
  - j. Each diver must rotate and practice both surface support and safety diver.
  - k. Exit.
  - l. Log dive.
2. Open Water Dive 2:
- a. Set-up and dive plan.
  - b. Enter.
  - c. Line handling and simulated lost diver procedures.
  - d. Fifteen-minute exploring under the ice.
  - e. e. Exit.
  - f. Log dive.



## 18. Marine Ecosystems Awareness

### 18.1 Introduction

Divers and snorkelers have a vested interest in protecting the aquatic environment. In many cases, these individuals do not have environmental information about the local sites. This specialty is designed to increase understanding of marine and freshwater environments, the problems facing these unique ecosystems, and the role that divers and snorkelers play in protecting our aquatic resources.

The goal of the course is to allow participants to apply best practices in their own interactions with the aquatic environment, be able to identify diver centers and boat operators that apply best practices to their services, understand how to minimize impact in their interactions with the aquatic environment, and understand how activities such as surveying, cleanups, and observation can benefit aquatic environments.

A non-diving, snorkeling certification is available to those participants who complete all requirements as outlined in Section 18.8 using snorkeling equipment. An awareness certification is available to non-divers who complete the required academic materials.

### 18.2 Who May Teach

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### 18.3 Student to Instructor Ratio

#### Academic:

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### Confined Water (swimming pool-like conditions):

1. N/A.

#### Open Water (ocean, lake, quarry, spring, river, or estuary):

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

## **18.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent if participating in the open water dives. SDI Snorkeler certification or equivalent is required for the non-diving certification. This may also be taught as an academic-only course where no prior certification is required.
2. Minimum age 18, 10 with parental consent.

## **18.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two open-water sessions are required for the diving or non-diving snorkeling certification with complete briefs and debriefs by the instructor.
2. For scuba dives, dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **18.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk* Form
  - b. *SDI Medical Statement* Form.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration* Form to SDI Headquarters or registering the students online through member's area of the SDI website. For academic-only courses, online registration is the only option.

## **18.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual or snorkeling equipment as described in the SDI Snorkeling Course.
2. A marine life identification guide.
3. Diver's slate.

## **18.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Physical Attributes:
  - a. Temperature and thermoclines.
  - b. Salinity and halocline.
  - c. Dissolved gases.
  - d. Light, as it applies to photosynthesis.
  - e. Nutrient circulation.
  - f. Waves and tides.
  - g. Currents and nutrient cycling.
2. Topographical Features.
3. Marine Organisms:
  - a. Plankton:
    - i. Zooplankton.
    - ii. Phytoplankton.
  - b. Aquatic plants:
    - i. Types of algae.
    - ii. Seed plants.
    - iii. Specific local plant life.
  - c. Aquatic animals:
    - i. Sponges.
    - ii. Cnidarians.
    - iii. Mollusks.

- iv. Arthropods.
  - v. Echinoderms.
  - vi. Chordates.
  - d. Specific local animals.
  - e. Aquatic food webs.
  - f. Behavioral changes due to daily cycle.
4. Ecosystems:
- a. Tropical reef.
  - b. Temperate.
  - c. Freshwater.
5. Environmentally Friendly Diving Techniques:
- a. Buoyancy control.
  - b. Kick technique.
  - c. Local considerations.
6. Issues Facing Marine Ecosystems:
- a. Climate Change:
    - i. Global warming.
    - ii. Rising sea levels.
    - iii. Coral bleaching.
    - iv. Ocean acidification.
    - v. Changes in currents and weather patterns.
  - b. Issues of local interest:
    - i. Overfishing.
    - ii. Destructive fishing methods.
    - iii. Removal of organisms.
    - iv. Souvenir trade.
    - v. Land-based pollution.
    - vi. Overdevelopment of coastal areas.
    - vii. Anchor and collision damage.
    - viii. Other potential negative impacts – tourism, non-diving water sports, sunscreens.

7. Best Practices to reduce potential negative impacts:
  - a. Prevention of unwanted transfer of organisms.
  - b. Responsible and sustainable harvesting.
  - c. Feeding activities.
  - d. Anchoring and boat contact.
  - e. Contact with organisms.
  - f. Respect for cultural heritage and underwater resources.
  - g. Carrying capacity of sites regarding diver numbers.
  - h. Behavioral changes of organisms.
  - i. Effect of silting and bubbles.
  - j. Streamlining equipment.
  - k. Special concerns for photography/videography.
  - l. Special concerns for underwater wrecks.
8. Diver Interactions:
  - a. Intrusive.
  - b. Non-intrusive.
  - c. Feeding.
  - d. Treating marine life injuries.
9. Observation Techniques:
  - a. Grids.
  - b. Passive observation.
10. Collection Methods.

### ***18.9 Required Skill Performance and Graduation Requirements***

**Students completing diving or snorkeling versions of this course are required to successfully complete the following:**

1. Open Water Session 1:
  - a. Buoyancy control if applicable.
  - b. Make general observations:
    - i. Location.
    - ii. Bottom composition.

- iii. Marine life.
  - iv. Special characteristics.
  - v. Indications of human impact.
  - c. Grid observations:
    - i. Make two separate sets of grid observations during the dive.
    - ii. Describe all marine life for later identification.
    - iii. Record behavior.
  - d. Log session.
2. Open Water Session 2:
- a. Complete this dive at a different site or time of day than Session 1.
  - b. General Observations – same as Session 1.
  - c. Specific observations – same as Session 1.
  - d. Site debrief.
  - e. Compare and contrast dive sites.
  - f. Discuss the effect of human impacts.
  - g. Discuss ways to minimize human impact.
  - h. Log session.

## 19. Night/Limited Visibility Diver

### 19.1 *Introduction*

Many divers find that night diving is their favorite type of diving. As with all specialty diving applications, procedures are different than those associated with open water diving. The purpose of this course is to acquaint the open water diver with the procedures, techniques, and potential hazards associated with diving at night, or in limited visibility. By becoming familiar with the use of dive lights, and night diving techniques such as navigation, buddy system procedures, communications, buoyancy control, and interacting with nocturnal aquatic life, the diver will be able to enjoy night diving with maximum safety.

### 19.2 *Who May Teach*

An active SDI Instructor that has been certified to teach this specialty.

### 19.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 4 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 8 with the assistance of 2 active Assistant Instructors or Divemasters.

### 19.4 *Student Prerequisites*

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

## **19.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The dive plan must include surface interval, maximum no-decompression time, etc. to be figured out and logged.
3. Night or limited visibility dive is defined as any dive requiring a light to enhance Visibility.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **19.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form.*

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **19.7 Training Material**

### **Required Material:**

1. *SDI Night and Navigation Student Manual* and *Scuba IQ Review* or eLearning.
2. *SDI Night Diver Digital Instructor Resource.*

## **19.8 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.



2. Lights; primary and back up.
3. Whistle/ Audible signaling device.

### **19.9 *Approved Outline***

Instructors may use any additional text or materials that they feel help present these topics.

#### **The following topics must be covered.**

1. Why Dive at Night
  - a. Different aquatic life.
  - b. Experience in limited visibility.
2. Special Equipment:
  - a. Diving lights.
  - b. Importance of light and back up.
  - c. Comparison of different styles.
  - d. Personal dive beacon.
3. Buddy System:
  - a. Buddy contact:
    - i. Good visibility, close visual contact.
    - ii. Limited visibility, use buddy line.
    - iii. Night vision.
    - iv. Don't shine light in buddy's eyes.
  - b. Communications:
    - i. When close use standard hand signals.
    - ii. Light signals at distance:
      1. Attention/OK.
      2. Something's wrong.
    - iii. Tactual signals; buddy line:
      1. Stop – One pull.
      2. Go/OK – Two pulls.
      3. Surface – Four pulls.
      4. Come Quick! – Five or more pulls.
    - iv. Whistle on surface:

1. Five or more blasts: Distress.
4. Navigation:
  - a. Bottom contour.
  - b. Compass.
  - c. Boat.
  - d. Beach/Lake.
  - e. Marker light/strobe.
5. Disorientation:
  - a. With buddy.
  - b. Lost buddy.
  - c. Light failure.
  - d. Buoyancy considerations.
6. Emergency Procedures:
  - a. Disabled diver.
  - b. Lost diver.
  - c. Diving maladies.
7. Underwater Environment:
  - a. Nocturnal life.

### ***19.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Plan dive.
  - b. Safety procedures.
  - c. Enter and descent.
  - d. Remain submerged for at least 20 minutes.
  - e. Change direction several times while maintaining proper navigation.
  - f. Use properly, underwater light, submersible pressure gauge, compass, depth gauge, and computer.
  - g. Maintain buddy contact throughout dive.
  - h. Log dive.

2. Open Water Dive 2:
  - a. Plan dive.
  - b. Safety procedures.
  - c. Descend.
  - d. Two-minute swim without compass.
  - e. Surface and reorient.
  - f. Descend and navigate.
  - g. Log dive.

## **20. Research Diver**

### **20.1 Introduction**

The purpose of this specialty course is to acquaint the open water diver with the fascinating topic of research diving. After the completion of this course, a diver will be better able to discover, explore, and appreciate the underwater environment by using research techniques and better preserve and protect the underwater environment.

### **20.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **20.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **20.4 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 with parental consent.

### **20.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **20.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **20.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. Slate.
3. Measuring device.
4. One metre/yard square grid.

## **20.8 Approved Outline**

**Instructors may use any additional text or materials that they feel help present these topics. The following topics must be covered.**

1. The Water Environment, Fresh and Salt Water:
  - a. Ecology.
  - b. Food chains.

- c. Habitat.
  - d. Niche.
  - e. Interactions with other forms.
  - f. Basic oceanography.
  - g. Coral reefs.
  - h. Kelp.
  - i. Bays and open coast.
2. The Marine Animals:
- a. Fishes.
  - b. Mollusks.
  - c. Invertebrates.
  - d. Mammals.
  - e. Dangerous animals.
3. Diving Methodology:
- a. Collection of data:
    - i. Use of compass, underwater slate, measuring techniques, photography for science, accuracy in estimating techniques.
  - b. Detailed mapping techniques.
  - c. Survey methodology.
  - d. Marking and capturing.
  - e. Research for sport.
4. Conservation.

## ***20.9 Required Skill Performance and Graduation Requirements***

### **Students are required to successfully complete the following:**

Choose a location where the students may either use different methods of counting particular species or use mapping techniques to show the locations of different marine life and geographic formations. Students are required to successfully complete the following:

- 1. Open Water Dive 1:
  - a. Plan dive.
  - b. Test and check all equipment.

- c. Enter and descend.
  - d. Familiarization with the area and ecology.
  - e. Marine life identification.
  - f. Log dive.
2. Open Water Dive 2:
- a. Plan dive.
  - b. Enter and descend.
  - c. Monitor depth/bottom time.
  - d. Compass usage.
  - e. Area survey/research techniques.
  - f. Recording of data.
  - g. Log dive.

## **21. Search and Recovery Diver**

### **21.1 Introduction**

This specialty is designed to acquaint the diver with the special skills and techniques necessary to successfully plan, execute and evaluate a search and recovery dive.

### **21.2 Who May Teach**

1. An active SDI Instructor that has been certified to teach this specialty.

### **21.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **21.4 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 with parental consent.

### **21.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.



2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **21.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk* Form
  - b. *SDI Medical Statement* Form.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration* Form to SDI Headquarters or registering the students online through member's area of the SDI website.

## **21.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. All lines, lift bags, reels, etc must be provided by the instructor.

## **21.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Navigation:
  - a. Compass use
  - b. Estimating distances:
    - i. Kicking techniques.
2. Natural navigation.

3. Limited Visibility Diving:
  - a. Factors affecting visibility.
  - b. Hazards of limited visibility:
    - i. Salt water.
    - ii. Fresh water.
  - c. Techniques of diving.
4. Search Techniques:
  - a. Shotgun:
    - i. When to use.
    - ii. How to control.
  - b. Circular search:
    - i. When to use.
    - ii. How to control.
    - iii. Advantages.
  - c. Grid search:
    - i. When to use.
    - ii. How to control.
    - iii. Advantages.
  - d. Current (Overlap) search:
    - i. When to use.
    - ii. How to control.
    - iii. Advantages.
  - e. Signals for search diving:
    - i. Hand signals.
  - f. Line signals.
5. Salvage Techniques:
  - a. Depth considerations.
  - b. Lift bags.
  - c. Lifting drums.
  - d. Necessary qualities of lifting devices.
  - e. Knots and rigging.

- f. Fill techniques.
- g. Mud/silt suction considerations.

## **21.9 *Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive I:
  - a. Compass review.
  - b. Search techniques.
  - c. Lifting techniques.
  - d. Have students practice and perform a few different search patterns.
  - e. Recover an object from depth.
  - f. Log dive.
2. Open Water Dive 2:
  - a. Simulated scuba emergency.
  - b. Minimum of 2 searching techniques
  - c. Salvage and recovery of an object with a water weight of between 11 and 33 kg/25 and 75 lbs.
  - d. Log dive.

## **22. Shore/Beach Diver**

### **22.1 Introduction**

The purpose of this course is to acquaint a diver with the necessary procedures and knowledge to safely dive from shore. The focus of this specialty must be on how to handle different types of surf and shore conditions.

### **22.2 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### **22.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **22.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

### **22.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **22.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **22.7 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

## **22.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Dive Planning:
  - a. Map of shore.
  - b. Compass review.
  - c. Navigation.
2. Emergency Procedures:

- a. Surface emergencies, no scuba.
  - b. Scuba emergencies.
  - c. Rescue procedures.
  - d. Review of lifesaving skills.
3. Shore Diving Procedures:
    - a. Set-up.
    - b. Navigation aids.
    - c. Landmarks.
    - d. Site assessment.
    - e. Special procedures, i.e., keeping the water in fin pockets to wash off Feet in sand.
  4. Diving Procedures:
    - a. Use of the dive flag.
    - b. Float handling and line attachment.
    - c. Surf zone considerations.
    - d. Buddy procedures.
  5. Things to Do off the Beach:
    - a. Underwater collecting and hunting.
    - b. Photography.
    - c. Wreck diving.

## ***22.9 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Site selection.
  - b. Dive plan.
  - c. Assess the conditions.
  - d. Navigation review.
  - e. Surf procedure practice.
  - f. Compass check.
  - g. Natural navigation check.

- h. Descent and resurface.
  - i. Navigation.
  - j. Float control.
  - k. Return to beach.
  - l. Exit.
  - m. Log dive.
2. Open Water Dive 2:
- a. Site selection.
  - b. Dive plan.
  - c. Assess the conditions.
  - d. Surf procedure.
  - e. Underwater natural navigation.
  - f. Float control.
  - g. Return the group to the beach.
  - h. Exit.
  - i. Log dive.

## **23. Sidemount Diver**

### **23.1 Introduction**

This course is designed to teach certified divers how to safely utilize side-mounted primary Cylinders as an alternative to the traditional back-mounted configuration. The course is strictly non-decompression with a maximum depth limit of 40 metre /130 Feet, or within the limit of the student's current certification, whichever is shallower.

### **23.2 Qualifications of Graduates**

Upon successful completion of this course, graduates may engage in Sidemount diving activities without direct supervision provided the following limits are adhered to:

1. Safety stops as appropriate.
2. Planned dives do not exceed the diver's current certification level.

### **23.3 Who May Teach**

1. This course may be taught by any active SDI Sidemount Specialty Instructor. Instructors can apply for administrative upgrade by:
  - a. Providing documentation of SDI Sidemount diver level certification or equivalent.
  - b. Completing 25 Sidemount dives.

**OR**

- c. Successfully completing an SDI Sidemount Instructor course with a active SDI Sidemount IT and completing 10 Sidemount dives.

### **23.4 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**



1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

### **23.5 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 with parental consent.

### **23.6 Course Structure and Duration**

#### **Open Water Execution:**

1. Two open water dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.
3. This is a non-overhead environment course.

#### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

### **23.7 Administrative Requirements**

#### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

#### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **23.8 Training Material**

### **Required Material:**

1. *SDI/TDI Sidemount Student Manual* or eLearning.
2. *SDI/TDI Sidemount Instructor Guide*.

## **23.9 Required Equipment**

1. Cylinder(s), volume appropriate for planned dive, and student gas consumption.
2. Regulators appropriate for the cylinder configuration with a pressure gauge on each first stage and a total of two second stages.
3. Buoyancy compensator device (BCD) with power inflator appropriate for Sidemount configuration.
4. Exposure suit, adequate for diving environment.
5. Mask and fins.
6. Dive computer.
7. Compass.
8. Rescue signal.

## **23.10 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Gas management utilizing independent cylinders.
2. Equipment considerations:
  - a. Cylinder options.
  - b. Regulator options.
  - c. Buoyancy compensator device (BCD)/harness options.
  - d. Proper weighting.
  - e. Equipment configurations.
3. Communication:
  - a. Hand signals.
4. Problem solving:

- a. Gas-sharing.
- b. Gas hemorrhages.
- 5. Water entries:
  - a. Shore.
  - b. Boat.
- 6. S-Drills (specific to Sidemount).

### ***23.11 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

**Land drills:**

- 1. May be performed at the instructor's discretion.

**In-water skills during open water dives:**

- 1. Plan dive.
- 2. Test and check all equipment (depth gauges, bottom timers/watches, and computers).
- 3. Familiarization with area.
- 4. Descend to the planned depth and do not exceed any pre-planned limits.
- 5. Demonstrate the ability to safely manage gas.
- 6. Monitor depth/time/air consumption, figure all times on slate.
- 7. Demonstrate ability to control buoyancy.
- 8. Attaching Sidemount cylinders while:
  - a. Out of water.
  - b. On the surface, standing on bottom.
  - c. On the surface, in water too deep to stand.
  - d. At depth.
- 9. Perform regulator switches.
- 10. Perform safety stops.

**In order to complete this course, students must:**

## SDI Standards and Procedures

### Part 3: Specialty Standards

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1. Perform all land drills and open water dive requirements safely and efficiently.
2. Demonstrate mature, sound judgment concerning dive planning and execution.
3. Log all dives.

## 24. Solo Diver

### 24.1 *Introduction*

The objective of this course is to train divers in the benefits, hazards, and proper procedures for diving solo. Upon successful completion of this course, graduates may engage in solo diving activities.

### 24.2 *Who May Teach*

An active SDI Solo Diver Instructor that has been certified to teach this specialty.

To qualify to teach the Solo Diver Program the instructor must:

1. Be minimum age 21.
2. Have a minimum of 1 year of teaching experience.
3. Have certified 50 or more students at diver-level.
4. Show verification of completing the SDI Solo Diver program within the past 24 months either by completing the eLearning course (if available in their language/region) or the diver course with a qualified instructor using printed materials.
5. This rating may be obtained by administrative upgrade, or by completing a course with an SDI Solo Diver Instructor Trainer but the prerequisites remain the same either way.

### 24.3 *Student to Instructor Ratio*

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.

## **24.4 Student Prerequisites**

1. SDI Advanced Diver or equivalent.
2. Minimum age 21.
3. Provide proof of 100 logged dives.

## **24.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **24.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **24.7 Training Material**

### **Required Material:**

1. *SDI Solo Diver Student Manual and I.Q. Review or eLearning*.
2. *SDI Solo Diver Instructor Guide*.

**Optional Materials:**

1. *SDI Solo Diver* planning slate.

## **24.8 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual with exception of a safe second, or octopus, is not allowed as a redundant air source.
2. One of the following must be used to provide an additional independent regulator attached to an air source: pony cylinder, twin cylinders with isolation, H-valve, independent doubles, or SpareAir™.

## **24.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Why We Must Solo Dive:
  - a. History of buddy diving.
  - b. Pros and cons of buddy diving.
  - c. Pros and cons of solo diving.
  - d. Legal liability assumed by buddy diving.
  - e. How to use the solo diving waiver.
2. Who Must Solo Dive:
  - a. Prerequisites and practicalities.
3. Solo Diving Mentality:
  - a. Self-reliance.
  - b. Self-rescue.
4. When Not to Solo Dive:
  - a. Overhead environments.
  - b. Decompression and deep diving.
5. Equipment for Solo Diving:
  - a. Redundant air sources: pony cylinder, twin cylinders with isolation, independent doubles, SpareAir™.
  - b. Regulators.

- c. Buoyancy compensator devices (BCD).
  - d. Exposure suits.
  - e. Dive knives and other cutting tools
  - f. Surface marker buoys and floatation devices
  - g. Safety reels.
  - h. Underwater navigational tools.
  - i. Current and ascent lines.
  - j. Surface audible signaling devices.
  - k. Dye markers, signal mirrors or flares.
  - l. Emergency position indicating radio beacons (EPIRBs).
  - m. Equipment configuration appropriate for solo diving; streamlining equipment.
6. Planning and Conducting a Solo Dive:
- a. Dive site selection and pre-dive considerations.
  - b. Filing notification of planned dive activities.
  - c. Contingency planning.
  - d. Equipment configuration appropriate for solo diving.
  - e. Gas management.
  - f. Avoiding entanglements.
7. Navigation:
- a. Why navigation skills are important to the solo diver.
  - b. Use of a mechanical compass.
  - c. Electronic compass.
  - d. Underwater diver tracking systems.
8. Management of Solo Diving Emergencies:
- a. Free-flowing regulators.
  - b. BCD inflator malfunctions.
  - c. Mask problems.
  - d. Managing currents.
  - e. Entanglements.
  - f. Unintended decompression obligations.



- g. Panic and stress management techniques.
- h. Use of surface marker buoys and location devices.
- 9. Review the *SDI Solo Diver Liability Release and Express Assumption of Risk Agreement Form*:
  - a. How students use the *SDI Solo Diver Liability Release and Express Assumption of Risk Agreement Form*:
- 10. During training.
- 11. Post training at dive locations.

## **24.10 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

### **Swimming skills:**

1. 200 Metres/600 Feet surface swim in full scuba equipment, configured for local diving conditions; must be non-stop and performed in an open water environment.

### **Scuba skills:**

1. Demonstrate adequate pre-dive planning.
2. Limits based on personal gas consumption.
3. Exact dive and/or no-decompression profile.
4. Properly execute the planned dive within all predetermined limits.
5. Equipment configuration appropriate for solo diving:
  - a. Streamlining equipment.
  - b. How to use and carry a redundant air supply.
6. Proper descent/ascent rates.
7. Proper safety stop procedures.
8. Monitoring of decompression status equipment; tables, computers, equipment.
9. Navigation skills.
10. Demonstrate proficiency of navigation with compass.
11. Demonstrate emergency change over to a backup regulator or bailout scuba at a depth not exceeding 30 Metres/100 Feet.

12. Deploy surface marker and use of surface audible signaling device.

## **25. Underwater Hunter and Collector Diver**

### **25.1 Introduction**

The purpose of this specialty is to actively allow the student to engage in the collection of certain marine objects and to demonstrate and explain the necessary rules of underwater hunting. Stress must be placed on prudent and conservative techniques of both aspects.

### **25.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **25.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **25.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

### **25.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **25.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **25.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. Catch bag or stringer.
3. Collecting tools: spear gun, tickle stick, etc.

## **25.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Survey of Marine Life:
  - a. Salt water:
    - i. Invertebrate life.
    - ii. Fish.

- b. Fresh water:
  - i. Invertebrate life.
  - ii. Fish.
- 2. Ecology and Conservation:
  - a. Ecology:
    - i. Fresh water: rivers, streams, springs, and lakes.
  - b. Salt water:
    - i. Pollution.
    - ii. Care of environment.
  - c. Conservation:
    - i. Rules of conduct.
    - ii. Public service considerations.
- 3. Collecting Techniques:
  - a. Where to look.
  - b. What to take.
  - c. How much to take.
  - d. How to take it.
  - e. Legal aspects of collecting.
- 4. Spear fishing Techniques:
  - a. Handling of the spear gun.
  - b. What fish may be taken.
  - c. Limits of taking.
  - d. Hazards of spear fishing:
    - i. Size of fish.
    - ii. Blood released.
    - iii. What not to shoot.
    - iv. Legal aspects of spear fishing.
- 5. Spear fishing rules:
  - a. Rules by law.
  - b. Rules by diving courtesy.
- 6. Invertebrate Collecting:

7. Conch, clams, scallops, etc:
  - i. Which kind to take.
  - ii. Local laws.
- b. Lobster:
  - i. What to take.
  - ii. How to catch without getting hurt.
  - iii. Size limits.
  - iv. Bag limits.

## **25.9 *Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. The first dive must teach the student how the collecting device works; for example, how to load and shoot the spear gun.
  - b. Set up underwater targets for the student to practice shooting and reloading underwater.
  - c. If teaching how to hunt for lobster, show some of the different habitats in which you may find the species.
2. Open Water Dive 2:
  - a. Use the skills from the first dive to attempt to collect a certain species, making sure that all local laws are followed and allowing the student to enjoy their catch.

## **26. Underwater Navigation Diver**

### **26.1 Introduction**

This course is designed to give students a greater understanding and experience on how to properly navigate underwater using both natural and compass navigation.

### **26.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **26.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **26.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

### **26.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.

2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **26.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **26.7 Training Material**

**Required Material:**

1. *SDI Night and Navigation Student Manual and I.Q. Review or eLearning.*
2. *SDI Underwater Navigation Digital Instructor Resource.*

## **26.8 Required Equipment**

Basic open water scuba equipment as described in section three of this manual.

## **26.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics. The following topics must be covered.

1. The Aquatic Environment:



- a. Vision.
  - b. Light.
  - c. Sound.
  - d. Tides.
  - e. Currents.
  - f. Waves.
  - g. Surge.
2. Natural Navigation:
    - a. Bottom contours.
    - b. Depth.
    - c. Amount of light.
    - d. Surge.
    - e. Currents.
    - f. Underwater objects (rocks, wrecks, etc).
3. Compass
    - a. Types.
    - b. Analog.
    - c. Digital.
    - d. Features:
      - i. Lubber line.
      - ii. Bezel.
      - iii. Luminous dial.
    - e. Use of compass:
      - i. Out and back.
      - ii. Squares.
      - iii. Triangles.
4. Estimating Distance Underwater.
  5. Kick cycles.
  6. Time.

## ***26.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Skills are generally done with more success if practiced on the surface from shore. Using the shore or descent line as a starting /reference point makes keeping track of students easier.
  - b. Plan dive.
  - c. Enter water from boat or shore.
  - d. Practice out and back technique on surface and underwater.
  - e. Squares and triangles on surface.
  - f. Perform square and triangle on bottom.
  - g. Practice locating a fixed object underwater by triangulation at the surface.
  - h. Ascend and exit.
2. Open Water Dive 2:
  - a. This dive must be a relaxed practice session. Place objects or use existing underwater formations and set up an underwater course. Let the students try and find all the points based on the direction and distance you give them prior to the start of the dive.
  - b. Plan dive and decide what the best pattern to use for the dive site is.
  - c. Enter and descend.
  - d. Run desired dive pattern.
  - e. Enjoy the sites.
  - f. Ascend and exit.

## **27. Underwater Photographer Diver**

### **27.1 Introduction**

This course is designed to introduce divers to the equipment, techniques, and procedures to take underwater photographs and allow the student to experience and discuss many areas of interest to the underwater photographer.

### **27.2 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### **27.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **27.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.

### **27.5 Course Structure and Duration**

#### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

**Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **27.6 Administrative Requirements**

**Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

**Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **27.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. Underwater photography equipment applicable to course structure and activities

## **27.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

The following topics must be covered.

1. Underwater Light:
  - a. Variation of light under water.
  - b. Time for best available light photography.

- c. Color correction filtering for depth.
  - d. Strobes vs Video Light.
  - e. Selective color absorption of light.
  - f. Available light and strobe considerations.
  - g. Possible backscatter issues.
2. Film Considerations:
- a. Color balance.
  - b. Grain.
  - c. Resolving power.
  - d. Latitude.
  - e. Contrast.
  - f. Color reversal.
3. Digital:
- a. Capture Media.
  - b. Memory Technology.
  - c. Printing.
  - d. Post Dive Review ability.
  - e. TV vs Computer vs Camera.
4. Camera Use in Association with Scuba:
- a. Types of cameras:
    - i. Housed style.
    - ii. Integral unit.
  - b. Handling of equipment.
  - c. Camera settings:
    - i. Auto vs Manual.
    - ii. Optional settings (as required).
5. Photographic Subjects:
- a. Composition of scene.
  - b. Use of light enhancement.
  - c. Subject ease.
  - d. Use of models.

- e. Marine Conservation awareness.
- 6. Care of Equipment:
  - a. Saltwater care.
  - b. Fresh water care.
  - c. Care of the flooded-housed camera.
- 7. Use of Color Positive Films:
  - a. Ease of development (E—6 processing).
  - b. Mounting.
- 8. Digital Software:
  - a. Downloading images.
  - b. Photo Storage.
  - c. Photo Manipulation.
  - d. Printing & Mounting.

## ***27.9 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following:**

- 1. Open Water Dive 1:
  - a. Local dive site to familiarize the student with the equipment and handling.
  - b. Composition to be considered at a beginning point of view.
  - c. Plan Dive.
  - d. Suitable Entry (care to be taken with camera & additional equipment; these may be passed to diver once in the water in conditions & environment allows it).
  - e. Situational awareness (depth, time, air consumption and buddy awareness).
  - f. Photography of subjects as planned.
  - g. Conservational awareness.
  - h. Conduct safe ascent and safety stops.
  - i. Exit.
  - j. Log dive.
- 2. Open Water Dive 2:

- a. Choose a dive site to give the student more application with:
- b. Marine subjects.
- c. Additional light considerations.
- d. Wide coloring.
- e. Stress on safety while within the water environment and attaining good quality subjects.
- f. Both still and moving life subjects shown if possible.
- g. Conduct dive as per above.

**A post-dive session should be scheduled for students to review their photographic images and develop self-evaluation techniques.**

## **28. Underwater Video Diver**

### **28.1 Introduction**

Most divers have a desire to bring home the sights and sounds of being underwater. Underwater video makes it possible to save our underwater experiences and share them with others. Shooting underwater video is fun, exciting, and easy to learn. This course is designed to introduce divers to the equipment, techniques, and procedures needed to plan and shoot underwater video with maximum safety.

### **28.2 Who May Teach**

An active SDI Instructor or Assistant Instructor that has been certified to teach this specialty.

### **28.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. The instructor has the option of adding 2 more students with the assistance of an active Assistant Instructor or Divemaster.
3. The total number of students an instructor may have in the water is 12 with the assistance of 2 active Assistant Instructors or Divemasters.

### **28.4 Student Prerequisites**

1. SDI Open Water Scuba Diver, SDI Junior Open Water Scuba Diver, or equivalent.
2. Minimum age 18, 10 with parental consent.



## **28.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **28.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **28.7 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.
2. Video camera and underwater housing equipped for the video camera. Optional equipment, underwater lighting system.

## **28.8 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

### **The following topics must be covered.**

1. Video Equipment:

- a. Video systems.
  - b. Types of video formats.
  - c. Video cameras.
  - d. Video controls.
  - e. Accessories.
2. Underwater Video Housings:
    - a. Types of housings.
    - b. Housing controls.
    - c. Features and benefits.
    - d. Selecting housing.
3. Recording Underwater:
    - a. Dive planning.
    - b. Setting the video and dive objective.
    - c. Creating a storyboard.
    - d. Safety concerns.
4. Pre-dive Equipment Assembly:
    - a. Setting the camera controls.
    - b. Assembling the system.
    - c. Checking for leaks.
5. Video Camera Handling Techniques:
    - a. Using the viewfinder.
    - b. Point and shoot.
    - c. Using a tripod.
6. Basic Techniques:
    - a. Shot selection.
    - b. Shot times.
    - c. Putting shots in sequence.
    - d. Approaching marine life.
    - e. Cutting video shots.
    - f. Surface water shots.
    - g. Above water shots.

7. Underwater Video Lighting:
  - a. Natural light.
  - b. Artificial light.
  - c. Light systems and power supplies.
  - d. Lights and filters.
8. Shooting Video at Night:
  - a. Safety concerns.
  - b. Entries and exits.
  - c. Operating the camcorder and housing controls.
  - d. Approaching marine life at night.
9. Editing:
  - a. Fundamentals of editing.
  - b. Required equipment.
  - c. Editing equipment configurations.
  - d. Editing techniques.
  - e. In-camera editing.
10. Care and Maintenance:
  - a. After each dive.
  - b. Regular maintenance.
  - c. Periodic maintenance.
  - d. Storing underwater video systems.
  - e. Caring for a flooded video camera/housing.
11. Traveling with Underwater Equipment:
  - a. Deciding what equipment to bring.
  - b. Packing the equipment.
  - c. Bringing underwater video equipment on boats.
  - d. Flying with underwater video equipment.
  - e. Renting equipment.

## **28.9 Required Skill Performance and Graduation Requirements**

**Students are required to successfully complete the following:**

1. Open Water Dive 1:
  - a. Plan dive.
  - b. Set the video objective.
  - c. Plan the sequence of shots.
  - d. Review of procedures.
  - e. Entry.
  - f. Diving procedures.
  - g. Exit.
  - h. Log dive.
2. Open Water Dive 2:
  - a. Plan dive.
  - b. Review procedures.
  - c. Entry.
  - d. Planned dive.
  - e. Exit.
  - f. Log dive.
  - g. Care of equipment.
  - h. Edit footage to follow story.
  - i. Log Dive.

## **29. Wreck Diver**

### **29.1 Introduction**

Wreck diving can be one of the most exciting aspects of sport diving, however every effort must be made to maximize safe diving techniques. This course will discuss the equipment and techniques commonly employed while wreck diving. This course may be taught as a non-penetration, 2 dives required, or as a limited-penetration course, requiring 3 dives. Limited penetration is defined as a swim through or within the ambient light of entry point.

### **29.2 Who May Teach**

An active SDI Instructor that has been certified to teach this specialty.

### **29.3 Student to Instructor Ratio**

#### **Academic:**

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

#### **Confined Water (swimming pool-like conditions):**

1. N/A.

#### **Open Water (ocean, lake, quarry, spring, river, or estuary):**

1. A maximum of 8 students per instructor; it is the instructor's discretion to reduce this number as conditions dictate.
2. During the penetration portion of the course, the student to instructor ratio drops to 2 to 1.

### **29.4 Student Prerequisites**

1. SDI Open Water Scuba Diver or equivalent.
2. Minimum age 18, 15 for limited penetration course with parental consent.
3. Minimum age 10 with parental consent for a non-penetration course.
4. Junior Open Water Divers may not participate in any penetration activities or dives deeper than 18 Metres/60 Feet.
5. Divers must have a deep diver specialty certification or be able to provide proof of experience in order to dive deeper than 18 Metres/60 Feet in this course.

## **29.5 Course Structure and Duration**

### **Open Water Execution:**

1. Two dives are required with complete briefs and debriefs by the instructor.
2. The Dive plan must include surface interval, maximum no decompression time, etc. to be figured out and logged.
3. One additional dive must be conducted for a limited penetration certification.

### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

## **29.6 Administrative Requirements**

### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Liability Release and Express Assumption of Risk Form*
  - b. *SDI Medical Statement Form*.

### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

## **29.7 Training Material**

### **Required Material:**

1. *SDI Wreck, Boat and Drift Diving Student Manual* and I.Q. Review or eLearning.
2. *SDI Wreck, Boat and Drift Diving Instructor Guide*.

## **29.8 Required Equipment**

1. Basic open water scuba equipment as described in section three of this manual.

2. Reel.
3. One audible and one visual signaling device.

## **29.9 *Approved Outline***

Instructors may use any additional text or materials that they feel help present these topics.

### **The following topics must be covered.**

1. Motivating Statements:
  - a. Why wreck dive.
  - b. Potential benefits.
  - c. Beauty.
  - d. Mysteriousness.
  - e. One man's trash is another man's treasure.
  - f. It's fun.
2. Down lines and surface supports:
  - a. Size.
  - b. Material.
  - c. Surface supports:
    - i. Communications, when and if necessary.
    - ii. Back-up procedures.
3. The Buddy System.
4. Buddy Contact:
  - a. Contact with varied visibility.
  - b. Buddy lines.
  - c. Line signals.
  - d. Buddy positioning in close proximity.
5. Navigation/Charting:
  - a. Usage of the slate:
    - i. Larger than normal.
    - ii. Pre-dive marking.
  - b. Pre-planning the dive using charts, other information.
  - c. Directional determination.

6. Disorientation:
  - a. With/without buddy.
  - b. Lost buddy.
  - c. Light failure.
  - d. Emergency procedures.
7. Special Equipment:
  - a. Lights:
    - i. Primary and backup.
    - ii. Size.
    - iii. Burn time.
    - iv. Usage.
  - b. Knives and cutting devices.
8. Limited Visibility Diving:
  - a. Silt-out.
  - b. Psychological considerations.
9. Light usage:
  - a. Importance of light and backup.
  - b. Dark vision, do not shine light in buddy's eyes.
10. Lifelines and Reels:
  - a. Type of line.
  - b. Tie-offs.
  - c. Directional markers.
  - d. Line handling and reeling must be practiced on land prior to performing this skill underwater.
11. Special Emergency Procedures:
  - a. Safe Wreck:
    - i. As normal, but with considerations for lack of free access to the surface in some cases.
  - b. Hazardous or otherwise unsafe wrecks:
    - i. Must avoid.
    - ii. Don't enter doors blocked.



iii. Entrance restrictions.

12. Mapping the Wreck:

- a. Vertical.
- b. Horizontal.
- c. Feature Identification.

### ***29.10 Required Skill Performance and Graduation Requirements***

**Students are required to successfully complete the following. Dives 1 and 2 are for the non-penetration certification. In addition to dives 1 and 2, dive 3 is required for limited penetration certification; dive 4 is strictly optional for more experience.**

1. Open Water Dive 1:
  - a. Pre-dive review of dive computers.
  - b. Plan dive, to include depth, time and gas consumption.
  - c. Test lights.
  - d. Familiarization with areas.
  - e. Basic charting outside wreck.
  - f. Usage of lines outside wreck, optional.
  - g. Surface and log dive.
2. Open Water Dive 2:
  - a. Plan dive, to include depth, time and gas consumption.
  - b. Figure surface interval.
  - c. Descend.
  - d. Team complete mapping.
  - e. Usage of lines outside wreck, optional.
  - f. Surface and log dive.
3. Open Water Dive 3:
  - a. a. Plan dive, to include depth, time and gas consumption.
  - b. b. Descend.
  - c. c. Usage of lines inside wreck, optional.
  - d. d. Surface and log dive.
4. Open Water Dive 4 (Optional):

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- a. Plan dive, to include depth, time and gas consumption.
- b. Planned dive explained.
- c. Dive/explore as determined.
- d. Surface and log dive.

## 30. Visual Inspection Procedures (VIP)

### 30.1 *Introduction*

This course is designed to promote safety in the care and maintenance of high-pressure cylinders. The VIP program is intended to demonstrate to the scuba industry a need to meet and exceed the minimum standards established by the Code of Federal Regulations. In addition, it is intended to train inspectors in the proper handling, filling, and inspection techniques, including the identification of the various defective conditions that can lead to cylinder rejection or condemnation. The course will also cover the operation and repair of valves, cleaning and maintenance and the operation of high-pressure compressor systems.

Upon successful completion of this course graduates may:

1. Visually inspect high-pressure cylinders for defective conditions that could cause a cylinder failure.
2. Train fill station operators (FSO) in the safe methods of handling, transporting, and filling of high-pressure cylinders.

**It is important that the student understands that a requalification course is required every 3 years.**

### 30.2 *Who May Teach*

1. Any active SDI Visual Inspector Procedure Instructor.
2. Any professional who deals with high pressure cylinders and has been given written permission by SDI to teach this course.

### 30.3 *Student to Instructor Ratio*

#### **Academic:**

1. No more than 3 students per demonstration setup; tools and cylinders for the practical exercises.
2. No more than 30 students per active SDI VIP Instructor to ensure the students understand the procedures which are presented to them.

### 30.4 *Student Prerequisites*

Minimum age 18.

### **30.5 Course Structure and Duration**

#### **Course Structure:**

1. SDI allows instructors to structure courses according to the number of students participating and their skill level.

#### **Duration:**

1. A suggested minimum of 6 hours for classroom lectures and demonstrations.

### **30.6 Administrative Requirements**

#### **Administrative Tasks:**

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
  - a. *SDI Non-Scuba General Liability Release and Express Assumption of Risk Form*

#### **Upon successful completion of the course the instructor must:**

1. Issue the appropriate SDI certification by submitting the *SDI Diver Registration Form* to SDI Headquarters or registering the students online through member's area of the SDI website.

### **30.7 Training Material**

#### **Required Material:**

1. SDI Visual Inspection Procedures Student Manual or eLearning.
2. SDI Visual Inspection Procedures PowerPoint presentation.

### **30.8 Required Equipment**

1. A right-angle mirror with a magnification of 2 times and having a diameter small enough to enter the cylinder neck.
2. An inspection light of sufficient size and intensity to illuminate the mirror and threads being inspected.
3. A light wand or other light source to illuminate the interior surfaces of the cylinder being inspected.

4. A straight and right-angle pick and pit reference gauge to estimate the depth of any pitting noted on the cylinder walls.

### **30.9 Approved Outline**

Instructors may use any additional text or materials that they feel help present these topics.

**Recommended text includes the current CGA C6 and C6.1, or country specific equivalent. The SDI Visual Inspection Procedures Student Manual is mandatory for use during this course.**

The following topics must be covered:

1. Purpose:
  - a. Legal requirements, standards of the community.
2. Safe Handling of Cylinders:
  - a. Fill station operator rules and recommendations.
  - b. Identification of the various cylinder markings.
  - c. Legal/illegal filling requirements.
  - d. Filling procedures.
3. Tools and their uses.
4. Visual inspection indications:
  - a. Proper identification of the various defect conditions.
5. Criteria for rejection and condemnation of a cylinder:
  - a. Define the criteria for cylinder rejection.
  - b. Define the criteria for condemning a cylinder.
6. Other services:
  - a. Valve inspection and cleaning.
  - b. Compressor operations.
  - c. Oxygen cleaning.
7. The basis for cylinder cleaning.
8. Visual Inspection Procedure:
  - a. Step by step walk-through of the inspection process.

### ***30.10 Required Skill Performance and Graduation Requirements***

**The student is required to display a degree of competency in the identification of various defective conditions presented to him by the instructor using actual cylinders with known defective conditions.**

1. Inspect a cylinder during the program.
2. Satisfactorily complete the SDI Visual Inspection written examination with a score of at least 80%.
3. Demonstrate the ability to identify those conditions in a cylinder that would reject or condemn it.