part 3

SDI Specialty Standards

Contents

Revision History

Revision Number	Date	Changes
2.0	05/27/01	The Manual has been completely restructured and updated to reflect latest changes and additions.
2.1	09/04/01	Editorial changes and minor updates. Added CPR1st and Buoyancy Diver specialties.
2.2	10/10/02	Updated with latest Training Updates.
3.0	08/15/03	Updated with latest Training Updates.
3.1	12/19/03	Editorial changes and minor updates.
5.0	11/19/04	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	01/01/2013	No Changes
14.1	04/01/2014	3.13 Added Junior Specialty Diver upgrade to Specialty Diver procedure
14.2	10/01/14	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.)

Revision History

Revision Number	Date	Changes
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) 22.9.2 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 29.1 Added 3-year requalification requirement 29.5 Suggested minimum of 6 hours 29.6.4.a International Training General Liability Release and Express Assumption of Risk – For non-SCUBA courses Formatting updated

Revision History

Revision Number	Date	Changes
0120	01/01/2020	1. Added Item 6 to table, subsequent standards renumbered 2. Added Item 6 to table, subsequent standards renumbered 3.1.2 Defined the valid term for a physician signed medical 6. New standard added for Air Fill Station Technician, subsequent standards renumbered 15 (Formerly 14) Title changed to "Equipment Specialist" 15.6.4.a Changed form to "Non-scuba Liability Release" 15.6.4.b Removed 23.8 (Formerly 22.8) deleted item 2, renumber item 3
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	3.10 Item #3 added 4.1 Content expanded upon 4.4.2 Item expanded upon 5.9 Items "i" & "v" added, subsequent items renumbered 11.10 Items "e" & "f" added, subsequent items renumbered 17.2 Content expanded upon 29.10 For all Open Water dives, "Plan Dive" changed to "Plan dive, to include depth, time and gas consumption"

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	See chosen specialties	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					
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
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	Deep Diver if > 60ft	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
5	Advanced Buoyancy Control	10	2	8	Open Water	Yes
6	Air Fill Station Technician					
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	Equipment Specialist Diver	10	None	N/A	Open Water	Yes
11	Marine Ecosystems Awareness Diver	10	2	8	Open Water	Yes
12	Shore/Beach Diver	10	2	8	Open Water	Yes
13	Underwater Photographer Diver	10	2	8	Open Water	Yes
14	Underwater Video Diver	10	2	8	Open Water	Yes
15	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 Instructor Trainer, for that program.

3. General Specialty Standards

These 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. 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 answers yes to any question in the medical statement form, under the section marked "Have you ever had a history of or do you currently have," the student must provide written permission from a licensed physician before participating in confined for open water training or 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

***Note:** The SDI Solo Diver Specialty requires a separate waiver specific for solo diving activities; see the SDI Solo Diver Standard for the specifics

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.

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. A minimum of 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 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. 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
11. 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)
7. Exposure suit adequate for the training conditions
8. Compressed gas cylinder
9. Compass; during navigation skills
10. Knife or cutting device
11. 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 as follows:

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)
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 ft.

3.9 Temporary Certification Cards

Temporary cards are available for purchase from SDI and can be issued after all performance requirements and administrative requirements are met. The temporary cards are valid for 30 days from the signing and must be signed within 10 days of the course completion.

3.10 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 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 a qualified SDI Instructor Trainer

3.11 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 may 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.

3.12 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

3.13 Upgrading from SDI Junior certification to full SDI certification

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 letter of approval to upgrade signed by parent or legal guardian

*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 log book 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 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

Any active SDI Open Water Scuba Diver Instructor

4.3 Student to Instructor Ratio

Academic

1. Unlimited, so long as adequate facility, supplies and time are provided to ensure comprehensive and complete training of the 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, 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
2. 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 20 metres / 60 feet but not deeper than 30 metres /100ft; *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 this specialty 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:

SDI Advanced Adventure 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. Usage 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_2) factors
        iii. Nitrogen narcosis
        iv. Oxygen (O_2) 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. 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
        i. Analog
        ii. Digital
    b. Features
        i. Lubber line
        ii. Bezel
        iii. Luminous dial
    c. Use of compass
        i. Out and back
        ii. Squares
        iii. Triangles
4. Estimating Distance Underwater
    a. Kick cycles
    b. 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 planed 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 21metres / 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 facility, supplies, and time are provided to ensure comprehensive and complete training of the 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 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 this specialty 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 lb, or an11.1 litre / 80 cu ft cylinder approximately 1.52 kg / 5 lb
    c. Using lungs versus BCD. When using the lungs to compensate, be aware of not holding one's breath and paying attention how much the depth change 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 increase 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 an 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 lb to 1.2 kg / 4 lb
    ii. 3mm wet suit – 5 percent of body weight
    iii. 5mm 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 lb
    v. Dry suit – 10 percent of body weight, plus 3 to 4.5 kg / 7 to 10 lb
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:

1. Open Water Dive 1
    a. Assembling of 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 lb weight off, to illustrate under weight
        ii. Step 2: student adds 2 kgs / 4 lbs of weight, to illustrate over weight
        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. Open Water 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
      ii. Fine-tune with BCD or dry suit
      iii. Close to bottom exercises, no touch
3. Swimming exercises
4. Ascent that includes a safety stop hovering; simulate safety stop if in pool
5. 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.

6.2 Qualifications of Graduates needs to be added

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

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

6.4 Student to Instructor Ratio

Academic

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

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 training schedule to the students
4. Have the students complete:
    a. *SDI Non-Scuba General Liability Release*
5. The instructor must maintain all course records including fill logs for a minimum of seven years.

Upon successful completion of this specialty 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 the member's area of the SDI website

6.8 Required Equipment

1. *Visual Inspection Procedures* student manual or eLearning
2. *Air Fill Station Technician* KQ
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:

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:

1. Candidates must successfully fill 5 cylinders with air following 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 facility, supplies and time are provided to ensure comprehensive and complete training of the 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 of 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 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

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 this specialty 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 is the approved outline:

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 facility, 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. 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 this specialty 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. Life boats
    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 log book
    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. Any active SDI Open Water Scuba Diver Instructor
2. An SDI Assistant Instructor that has been certified to teach this specialty

9.3 Student to Instructor Ratio

Academic

1. Unlimited, so long as adequate facility, 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 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. 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 this specialty 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

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. Computers 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 3 seconds

   d. Information is calculated in the computer microprocessor during each update
   e. Information is displayed on screen
   f. User is responsible for interpreting information
5. Use of Dive Computers
   a. Always read 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 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 manufacture
   e. Computer failure
      i. Make a normal ascent with a safety stop, then exit
      ii. If 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:

1. 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

10.4 Student to Instructor Ratio

Academic

1. Unlimited, so long as adequate facility, 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, or current enrollment in one of those courses
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 this specialty 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 members area of the SDI website. 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* Instructor Guide

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 during this specialty:

1. History of Enriched Air Nitrox (EAN)
2. Physiology
    a. Oxygen (O_2)
    b. Nitrogen (N2)
3. Equipment Considerations
    a. Less than 40 percent oxygen content
    b. More than 40 percent oxygen content
4. Dive Computers
    a. Mix adjustable
    b. Oxygen integrated
    c. Nitrox programmable dive computer
5. Advantages and Disadvantages
    a. Use of nitrox for physiological advantage with an 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 facility, 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. 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 this specialty 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 (or eLearning course)
2. *SDI Deeper Diving With Dive Computers* Scuba I.Q. Review
3. *SDI Deeper Diving With Dive Computers* Instructor Guide

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 during this specialty:

1. Diving Tables and Computers
    a. History of dive tables and computers
        i. No-decompression
        ii. Usage 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_2) factors
            3. Nitrogen narcosis
            4. Oxygen (O_2) 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_2) 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 planed 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
    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 planed 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 facility, 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 this specialty 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

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
5. Using the Buddy System
6. 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 facility, supplies and time are provided to insure comprehensive and complete training of subject matter

Confined Water (swimming pool-like conditions)

1. N/A

Open Water (ocean, 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 this specialty 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 members 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* Instructor Guide

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 be in no greater than 18 metres / 60 feet and the instructor must guide it
    b. The instructor must demonstrate the proper use of 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

14.3 Student to Instructor Ratio

Academic

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

Confined Water (swimming pool-like conditions)

1. A maximum of 6 students per active instructor

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

14.4 Student Prerequisites

1. SDI Open Water Scuba Diver or equivalent, or current enrollment in one of those courses
2. Minimum age 18, 12 with parental consent

14.5 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

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 this specialty 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* Instructor Guide

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 Repairing
        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. Exhaust valve stuck closed
    d. Accidentally dropped weights
    e. Excessive air in feet
    f. Dry suit flooded

14.10 Required Skill Performance and Graduation Requirements

Confined water training is not required but highly recommended. It would consist of:

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 back of boat or shore entry
    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
    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 of 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 SDI Assistant Instructor that has been certified to teach this specialty

15.3 Student to Instructor Ratio

Academic

1. Unlimited, so long as adequate facility, supplies and time are provided to ensure comprehensive and complete training of the 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. *Non-scuba Liability Release* Form

Upon successful completion of this specialty 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 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 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 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 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 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 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 facility, supplies and time are provided to ensure comprehensive and complete training of the 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. 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 this specialty 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 members area of the SDI website

16.7 Required Equipment

Basic open water scuba equipment as described in section three of this manual in addition to the full face mask

16.8 Approved Outline

Optional Material
ERDI Full Face Mask Student Manual or elearning
ERDI Full face Mask Knowledge Quest or elearning
ERDI Full Face Mask Instructor Guide

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

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

16.9 Required Skill Performance and Graduation Requirements

Students are required to successfully complete the following:

1. Open Water Dive 1
    a. Dive plan
    b. Equipment set up
    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 utilization of 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 back up 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

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.

17.3 Student to Instructor Ratio

Academic

1. Unlimited, so long as adequate facility, supplies and time are provided to ensure comprehensive and complete training of the 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. 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 this specialty 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 members 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. 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 of 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. Exit
    f. Log dive

18. Marine Ecosystems Awareness Diver

18.1 Introduction

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

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 facility, supplies and time are provided to insure 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
2. Minimum age 18, 10 with parental consent

18.5 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

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 this specialty 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

18.7 Required Equipment

1. Basic open water scuba equipment as described in section three of this manual
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. Issues of local interest
    b. Global habitat destruction and pollution
    c. Over fishing
7. Coral Bleaching
8. Diver Animal 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

Dives must be completed at 2 different sites or at different times of the day. Students are required to successfully complete the following:

1. Open Water Dive 1
    a. Buoyancy control
    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 dive

2. Open Water Dive 2
    a. Complete this dive at a different site or time of day than dive 1
    b. General Observations
    c. Same as open water dive 1
    d. Specific observations
    e. Same as open water dive 1
    f. Site debrief
    g. Compare and contrast dive sites
    h. Discuss the effect of human impacts
    i. Discuss ways to minimize human impact
    j. Log dive

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 facility, 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. 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 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. 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 this specialty 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 and Navigation* Instructor Guide
3. *SDI Night and Navigation* Instructor Resource CD

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

6. Buoyancy considerations
7. Emergency Procedures
    a. Disabled diver
    b. Lost diver
    c. Diving maladies
8. Underwater Environment
    a. Nocturnal life

19.10 Required Skill Performance and Graduation Requirements

Students are required to successfully complete the following. Preferably the student has done a dive during the day at the site used for the night dive

1. Open Water Dive 1
    a. Plan dive
    b. Safety procedures
    c. Enter and descent
    d. Remain submerged 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 facility, 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. 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 this specialty 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

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

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 facility, 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. 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 this specialty 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 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
        ii. 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 l
    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 facility, 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, or current enrollment in one of those courses
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. 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 this specialty 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. Land marks
    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 40m/130ft, 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 diver's current certification level

23.3 Who May Teach

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

OR

1. 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 facility, 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 Diver or the equivalent
2. Minimum age 18; 15 with parental consent

23.6 Course Structure and Duration

Water execution

1. 2 open water dives are required with complete briefs and debriefs by the instructor
2. Dive plan must include surface interval, maximum no-deco 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 Required Material

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

23.9 Required Equipment

The following equipment is required for each student:

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 Required Subject Areas

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

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

The following skills must be covered during this course

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 planed 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 surface standing on bottom
    c. On surface in water to deep to stand
    d. At depth
9. Perform regulator switches
10. Perform safety stops

In order to complete this course, students must:

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 minimum 1 year 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 facility, 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. Minimum age 21
2. SDI Advanced Diver or equivalent
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. 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 Solo Diver Liability Release and Express Assumption of Risk Agreement* Form
    b. *SDI Medical Statement Form*

Upon successful completion of this specialty 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 material:

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; stream lining 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
      i. During training
      ii. Post training at dive locations

24.10 Required Skill Performance and Graduation Requirements

Skills are to be performed in open water.

The student is required to demonstrate understanding of the techniques to properly execute a solo dive.

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 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 facility, supplies and time are provided to insure comprehensive and complete training.

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. 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 this specialty 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 tool; 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
    e. What not to shoot
    f. Legal aspects of spear fishing
5. Spear fishing rules
    a. Rules by law
    b. Rules by diving courtesy

6. Invertebrate Collecting
    a. 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 facility, supplies and time are provided to ensure comprehensive and complete training of the 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. 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 this specialty 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 Night and Navigation* Instructor Guide
3. *SDI Night and Navigation* Instructor Resource CD

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 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 facility, 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. 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 this specialty 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 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. Salt water 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
        i. Marine subjects.
        ii. Additional light considerations.
        iii. Wide coloring.
    b. Stress on safety while within the water environment and attaining good quality subjects.
    c. Both still and moving life subjects shown if possible
    d. 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 facility, supplies and time are provided to ensure comprehensive and complete training of the 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. Plan dive 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 this specialty 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
3. Care of equipment

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 facility, supplies and time are provided to insure 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 for the non-penetration course with complete briefs and debriefs by the instructor
2. Dive plan must include surface interval, maximum no-decompression time, etc will be figured 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 this specialty 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, don't shine light in buddy's eyes
10. Life Lines 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. Plan dive, to include depth, time and gas consumption
    b. Descend
    c. Usage of lines inside wreck, optional
    d. Surface and log dive
4. Open Water Dive 4 (Optional)
    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 Procedure (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 understand 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 3students per demonstration setup; tools and cylinders for the practical exercises
2. No more than 30 students per active SDI VIP Instructor without the use of an experienced assistant to ensure the students understand the procedures which are presented to them.

30.4 Student Prerequisites

1. 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 lecture and demonstrations

30.6 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. *International Training General Liability Release and Express Assumption of Risk -for non-SCUBA courses* Form

Upon successful completion of this specialty 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 Required Materials

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

30.8 Required Equipment

The following equipment is the minimum required per inspection group while performing the visual inspection procedure.

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 C6and C6.1, or country specific equivalent. The following topics must be covered The *SDI Visual Inspection Procedures* Student Manual is mandatory for use during this course.

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 defect 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