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