1. TDI – Advanced Nitrox Instructor Course

1.1 Introduction

This is the instructor level certification course for Instructors wishing to teach the use of EAN-21 through one hundred (100) percent oxygen for optimal mixes to a depth of forty (40) msw / one hundred and thirty (130) fsw. The object of this course is to train Nitrox Instructors to teach the benefits, hazards and proper procedures for EAN-21 through one hundred (100) percent oxygen for dives not requiring staged decompression.

1.2 Qualifications of Graduates

Upon successful completion of this course, Instructors may teach diving activities utilizing EAN-21 through one hundred (100) percent oxygen as long as:

1. The diving activities approximate those of training.
2. The areas of activities approximate those of training.
3. Environmental conditions approximate those of training.

Upon successful completion of this course, graduates are qualified to enroll in:

1. TDI Decompression Procedures Instructor Course.
2. TDI Extended Range Instructor Course.

1.3 Who May Teach

Who may teach this course:

1. Any active TDI Advanced Nitrox Instructor Trainer may teach this course.

1.4 Student – 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 six (6) students per Instructor. However, it is the instructor's discretion to reduce this number as conditions dictate.

1.5 Student Pre-Requisites

The student must:

1. Be a minimum age of eighteen (18).
2. Have a minimum certification of Advanced Nitrox diver or equivalent.
3. Show proof of one hundred (100) logged open water dives.
4. Show proof of twenty five (25) Nitrox dives.
5. Must have certified ten (10) students in entry-level Nitrox.

1.6 Course Structure and Duration

Open Water Execution:

1. Four (4) dives with a minimum accumulated bottom time of one hundred (100) minutes.
2. All dives must be deeper than twenty-three (23) msw / seventy-five (75) fsw.
3. Two (2) dives must be deeper than thirty (30) msw / one hundred (100) fsw.
4. If Advanced Nitrox is taught in conjunction with Decompression Procedures only a total of six (6) dives are required.

Course Structure:

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

Duration:

1. The minimum number of classroom and briefing hours is six (6).

1.7 Administrative Requirements

The following is the 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 the Liability Release and Medical history forms.
5. The instructor must review the liability Release and Medical Forms before starting on the course.

Upon successful completion of the course the Instructor must:

1. Complete the Student Registration Form and send the Registration Form to TDI HQ.
2. Award Card.

1.8 Required Equipment

The following are required for this course:

1. TDI Advanced Nitrox Instructor Guide.
2. TDI Standards and Procedures Instructor Manual.
3. TDI Evaluation Forms.

The following minimum is required for each Instructor:

1. Sufficient gas supply for the planned dives.
2. Alternate air source attached to a secondary regulator (a sufficient length hose for air sharing attached to a secondary regulator is required).
3. A submersible pressure gauge.
4. Depth gauge and bottom timer **and / or** dive computer.
5. A redundant scuba unit (pony bottle) with regulator and SPG is recommended but not required.
6. Buoyancy Compensator with power inflator.
7. Exposure suit adequate for the open water environment.
8. All equipment properly labeled and cleaned as required for EAN mixtures.
9. Oxygen analyzer.

1.9 Required Subject Areas

Instructor Trainers must use the current TDI Standards and Procedures Instructor Manual and TDI Advanced Nitrox Manual but may also use any additional text or materials that they feel help present these topics. The following topics must be covered during this course:

1. Physics
   - A. Pressure review.
2. Physiology
   - A. Hypoxia.
   - B. Oxygen toxicity
     - I. Whole body.
     - II. CNS.
   - C. Nitrogen narcosis.
   - D. Nitrogen absorption and elimination.
   - E. Carbon dioxide toxicity.
   - F. Carbon Monoxide toxicity.
3. Formula Work
   - A. Best mix computations.
   - B. Maximum operating depth of a mixture computation.
4. Equipment Requirements
   - A. Less than forty (40) %.
   - B. Forty (40) % and above.
5. Dive Tables
   - A. Equivalent Air Depth with any table.
   - B. Computer generated tables (Pro-Planner, DPA, Dr. X, Abyss, etc).
6. Dive Computers
   - A. Mix adjustable.
   - B. 0_2 integrated.
7. Dive Planning
   - A. Operational Planning
     - I. Gas requirements.
     - II. Oxygen limitations.

III. Nitrogen limitations.

B. Common Mixing procedures (demonstrate one method) partial pressure mixing.

C. Continuous blending.

8. Decompression

A. EAN usage as deco gas i.e. 50/50 80/20 etc.

B. Oxygen for deco.

C. Advantages / disadvantages of multiple gas switches.

1.10 Required Skill Performance and Graduation Requirements

The following skills must be completed by the Instructor candidate. Maximum training depths shall not exceed forty (40) msw / one hundred thirty (130) fsw. The student must complete the following skills:

1. Properly analyze gas mixtures.
2. Demonstrate adequate pre-dive planning
   A. Limits based on personal gas consumption.
   B. Limits based on oxygen exposures at planned depth with actual mix.
   C. Limits based on nitrogen absorption at planned depth with actual mix.
3. Properly execute the planned dive within all pre-determined limits.

In order to complete this course, students must:

1. Satisfactorily complete the TDI Advanced Nitrox Course written examination and be able to adequately explain each answer to a prospective student.
2. Demonstrate mature, sound judgment concerning training, dive planning and execution.
3. Complete all open water requirements safely and efficiently.
4. Demonstrate proficiency in teaching Advanced Nitrox.
5. One (1) graded presentation on Advanced Nitrox topic.