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## **14. TDI – O<sub>2</sub> Equipment Service Technician Instructor Course**

### **14.1 Introduction**

This is the Instructor level certification course for Instructors wishing to teach the TDI Service Technician Course. This course involves the preparation of scuba equipment for use with diving gasses. The objective of this course is to train Instructors to teach the proper preparation of scuba equipment for the use with diving gases.

### **14.2 Qualifications of Graduates**

Upon successful completion of this course, graduates may teach the TDI O<sub>2</sub> Service Technician Course.

### **14.3 Who May Teach**

Who may teach this course:

1. Any active TDI Equipment Service Technician Instructor Trainer may teach this course.

### **14.4 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. N/A.

### **14.5 Student Pre-Requisites**

The student must:

1. Be a minimum age of twenty one (21).
2. Show proof of minimum certification of TDI Service Technician.
3. Provide proof of VIP certification or equivalency through a recognized agency.
4. Provide proof of a repair certification or equivalency through a recognized agency.



## **14.6 Course Structure and Duration**

Open Water Execution:

1. No 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).

## **14.7 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.

## **14.8 Required Equipment**

The following are required for this course:

1. TDI Equipment Service Technician Manual.
2. TDI Equipment Service Technician Instructor Guide.
3. TDI Standards and Procedures Instructor Manual.
4. Equipment Service Technician PowerPoint Presentation Series..

## **14.9 Required Subject Areas**

Instructor Trainers must use the TDI Equipment Service Technician Instructor Guide and the current TDI Standards and Procedures Instructor 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. The responsibility of the service technician.
2. Gases of diving
  - A. Air.
  - B. Oxygen.
  - C. Nitrogen.
  - D. Helium.
  - E. Other gases.



3. Oxygen handling
  - A. Oxygen hazards.
  - B. Causes and prevention of oxygen fires.
  - C. Oxygen system design.
  - D. Local regulations for gas blending and handling.
  - E. Oxygen compatible systems components.
4. Equipment Servicing
5.
  1. Materials for use in oxygen cleaned systems
    - I. Lubricants.
    - II. O-rings.
    - III. Cleaning chemicals.
  - B. Procedures for oxygen cleaning
    - I. Cylinders.
    - II. Valves.
    - III. Regulators.
    - IV. System components.
6. Gas Production
  - A. Equipment
    - I. Compressors.
    - II. Cylinders.
    - III. Filtration systems.
    - IV. Analog Gauges.
    - V. Digital Gauges.
7. Mixing Techniques
  - A. General Considerations.
  - B. Continuous blending systems.
  - C. De-nitrogenated Air Systems.
  - D. Partial Pressure blending
    - I. Mathematics of partial pressure.
    - II. Mixing by weight (optional).
8. Oxygen analyzing
  - A. Procedures.
  - B. Oxygen analyzers.
9. Cylinder handling and sign out.

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

The following skills must be completed by the Instructor candidate:

1. Satisfactorily complete the TDI Equipment Service Technician Course written examination and be able to adequately explain each answer to a prospective student.
2. Demonstrate mature, sound judgment concerning training, and execution.
3. Demonstrate proficiency in the preparation of scuba equipment for the use with diving gases.
4. Demonstrate proficiency in teaching the TDI Equipment Service Technician Program.
5. One (1) graded presentation on an Equipment Service topic.