

## 3.1.2 Scuba Diver

### 3.1.2.1 Course Outcomes

GUE's Scuba Diver course is designed to provide students with sufficient knowledge, skill, and experience to dive in open water environments under the direct supervision of a dive professional.

Upon fulfilling all minimum training requirements, the Scuba Diver will be qualified to:

- a. Dive with a professional from a recognized training agency in a diver-to-dive professional ratio not exceeding 3:1.
- b. Dive to a maximum depth of 40 ft/12 m.
- c. Dive within minimum decompression limits (MDLs), i.e., no required stops.
- d. Dive with appropriate surface support (e.g., access to EMS, infrastructure allowing for support in case of emergency).
- e. Dive in conditions equal to or better than those in which they were trained.
- f. Use nitrox under direct supervision of a dive professional from a recognized training agency who is certified to use nitrox.

### 3.1.2.2 Prerequisites

Applicants for a Scuba Diver course must abide by [Training Prerequisites \(2.1.4.1\)](#), plus:

- a. Be a minimum of 12 years of age. Documented parental or legal guardian consent must be submitted to GUE HQ when the participant is a minor.

### 3.1.2.3 Course Content

The Scuba Diver course is normally conducted over three days. It requires a minimum of eight confined water sessions, two open water dives, and at least twenty-four hours of instruction, encompassing lectures, land drills, and in-water work.

### 3.1.2.4 Scuba Diver Specific Training Standards

- a. Student-to-instructor ratio is not to exceed 6:1 during land drill or surface exercises; it cannot exceed 3:1 during any in-water training.
- b. Can be run with one trainee.
- c. During open water dives, the instructor must not engage in any activities other than direct supervision of the participants.
- d. All in-water activities must be conducted in daylight conditions.
- e. All in-water skills must be introduced and practiced in confined water shallow enough for the participant to stand in, before progressing to deeper water. When water shallow enough to stand in is not available, the skills may be introduced and practiced from a device such as a descent line, bar, ladder, or platform. In such a scenario, the in-water ratio is reduced to 1:1 and the skills introduction must not be conducted deeper than 6 ft/2 m.
- f. Maximum depth of 40 ft/12 m.

- g. No overhead diving.
- h. All dives must be within minimum decompression limits (MDLs), i.e., no required stops.

### 3.1.2.5 Required Training Materials

GUE training materials and recommended study as determined by the course study packet available online or via download after GUE course registration.

### 3.1.2.6 Academic Topics

- a. Introduction: GUE organization and course overview (objectives, limits, training requirements)
- b. Basic diving physics supporting knowledge and ability to safely manage:
  - i. Breathing underwater
  - ii. Equalization and avoidance of barotraumas, including DCI
  - iii. Buoyancy, trim, and balance; ascending, descending, and underwater propulsion
  - iv. Physical and mental stress while diving
- c. Introduction to decompression sickness
- d. Scuba diving equipment overview and operation
- e. Basic planning, including breathing gas management, dive preparation, and pre-dive sequence.
- f. Basic understanding of nitrox diving and importance of gas analysis
- g. Team diving and underwater communication
- h. Environmental considerations while diving
- i. Conservation-minded diving techniques

### 3.1.2.7 Land Drills and Topics

The following land drills must be used to familiarize students with important skills before they are practiced underwater.

- a. Skin diving techniques
- b. Equipment fit, assembly and disassembly, functionality checks
- c. Propulsion and maneuvering techniques
- d. Gas analysis
- e. GUE EDGE and pre-dive checks
- f. Basic 5 scuba skills
- g. SPG check
- h. S-drill
- i. Connecting and disconnecting LP inflation hose of BC (and drysuit, if used)
- j. Oral inflation of BC

### 3.1.2.8 Required Dive Skills and Drills

Students must demonstrate competence in the following skills to attain GUE Scuba Diver certification:

- a. Must be able to swim at least 300 yds/275 m in less than 14 minutes without stopping. This test should be conducted in a swimsuit and, where necessary, appropriate thermal protection.

- b. Must be able to swim a distance of at least 50 ft/15 m on a breath hold while submerged.
- c. Demonstrate a safe and responsible demeanor throughout all training.
- d. Demonstrate proficiency in skin diving.
- e. Demonstrate basic equipment proficiency and an understanding of the GUE equipment configuration.
- f. Demonstrate proficiency in safe diving techniques, including pre-dive preparation, in-water activity, and post-dive assessment.
- g. Demonstrate awareness of team member location and a concern for safety, responding quickly to visual indications and dive partner needs.
- h. Demonstrate proficiency in underwater communication.
- i. Demonstrate safe ascent and descent procedures.
- j. Demonstrate good buoyancy and trim, i.e., approximate reference is a maximum of 30 degrees off horizontal while remaining within a range of 5 ft/1.5 m from target depth.
- k. Comfortably demonstrate at least two propulsion techniques that would be appropriate in a delicate and/or silty environment.
- l. Efficiently demonstrate how to donate gas to an out-of-gas diver followed by an ascent to the surface.
- m. Demonstrate aptitude in the following open water skills: regulator removal, regulator exchange, long hose deployment, mask clearing, mask removal and replacement.
- n. Demonstrate comprehension of the components necessary for a successful backward kick.

### 3.1.2.9 Equipment Requirements

GUE base equipment configuration as outlined in Appendix A, plus:

- a. Snorkel, simple in design, with no purge valves

Excluding:

- a. Wrist-mounted compass
- b. Backup mask
- c. At least one cutting device (unless required by local regulations)
- d. Surface marker buoy (SMB) with spool

Prior to the commencement of the class, students should consult with a GUE representative to verify equipment requirements and the appropriateness of any selected equipment.

## Appendix A - GUE Equipment Configuration

The GUE base equipment configuration is comprised of:

- a. Tanks/cylinders: Students may use a single tank/cylinder with a single- or dual-outlet valve. Students may also use dual tanks/cylinders connected with a dual-outlet isolator manifold, which allows for the use of two first stages. Dual tanks/cylinders connected with a dual-outlet, non-isolator manifold can be used, but only in recreational (minimum

decompression) diving, and are considered an alternative for a single tank/cylinder. Consult course-specific standards and your instructor to verify size requirements.

- b. Regulators:
  - i. Single tank: The first stage must supply a primary second stage via a 5 to 7 ft/1.5 to 2 m hose. A backup second stage must be necklaced and supplied via a short hose. The first stage must also supply an analog pressure gauge, inflation for the buoyancy compensator (BC), and (when applicable) inflation for a drysuit.
  - ii. Double tank: One first stage must supply a primary second stage via a 5 to 7 ft/1.5 to 2 m hose (7 ft/2 m hose is required for all cave classes), and inflation for the buoyancy compensator (BC). The other first stage must supply a necklaced backup second stage via a short hose, an analog pressure gauge, and (when applicable) inflation for a drysuit.
- c. Backplate system:
  - i. Is held to the diver by one continuous piece of webbing. This webbing is adjustable and uses a buckle to secure the system at the waist.
  - ii. A crotch strap is attached and looped through the waistband to prevent the system from riding up a diver's back.
  - iii. The continuous webbing must support five D-rings;
    - 1. The first placed at the left hip
    - 2. The second placed in line with a diver's right collarbone
    - 3. The third placed in line with the diver's left collarbone
    - 4. The fourth and fifth are placed on the front and back of the crotch strap when divers plan to use advanced equipment such as DPVs.
  - iv. The harness below the diver's arms has small restrictive bands to allow for the placement of backup lights. The webbing and system retains a minimalist approach.
- d. Buoyancy compensation device (BC):
  - i. A diver's BC is back-mounted and minimalist in nature.
  - ii. It is free of extraneous strings, tabs, or other material.
  - iii. There are no restrictive bands or restrictive elastic affixed to the buoyancy cell.
  - iv. Wing size and shape is appropriate to the cylinder size(s) employed for training.
- e. At least one time/depth measuring device
- f. Wrist-mounted compass
- g. Mask and fins: Mask is low-volume; fins are rigid, non-split.
- h. Backup mask
- i. At least one cutting device
- j. Wetnotes with at least one pencil
- k. Exposure suit appropriate for the duration of exposure
- l. Surface marker buoy (SMB) with spool: Where required, the SMB should be appropriate for environmental conditions and deployed using a spool with at least 100 ft/30 m of line.

**The GUE PSCR configuration is comprised of:**

- a. GUE base equipment configuration (except Tanks/Cylinder)
- b. One primary and two backup lights
- c. A GUE-approved passive semi-closed circuit rebreather

- d. Modified tank configuration as appropriate for use with a GUE-approved passive semi-closed circuit rebreather
- e. Modified regulator configuration as appropriate for use with a GUE-approved passive semi-closed circuit rebreather

**The GUE CCR configurations are comprised of:**

- a. GUE base equipment configuration (except Tanks/Cylinder, where relevant)
- b. One primary and two backup lights
- c. A GUE-approved closed-circuit rebreather
  - i. Where required, students must own a GUE-approved closed-circuit rebreather before attending the course; they can, however, use a rented or borrowed unit during the course.
  - ii. The closed-circuit rebreather used by the student, with all associated components, must be fully functional (pass all tests on the rebreather pre-dive checklist) and serviced according to manufacturer specifications.
  - iii. All analog oxygen sensors must be less than one year from manufacturing date.
  - iv. All electronic components, including but not limited to the rebreather controller unit and monitoring systems, must be updated with the latest software and firmware versions published by the manufacturer.
- d. Modified tank configuration as appropriate for use with a GUE-approved closed-circuit rebreather
- e. Modified regulator configuration as appropriate for use with a GUE-approved closed-circuit rebreather
- f. Spare parts and consumables, including one set of appropriate batteries; one oxygen sensor; and one DSV/BOV mouthpiece.
- g. If using a drysuit inflation cylinder attached to the backplate, extended inflation cylinder straps need to be used to ensure that it does not interfere with or restrict the counterlung's function.

**The GUE Sidemount configuration is comprised of:**

- a. GUE base equipment configuration (except Tank/cylinders, Regulators, Backplate, BC)
- b. One primary and two backup lights
- c. Tanks/cylinders: Students are required to use independent cylinders with single valves and without manifolds, which allow for the use of one first stage each. Stage cylinders with proper cylinder marking (2.2, e) will also be utilized.
- d. Regulators: One of the second stages must be on a 7 ft/2 m hose. Both first stages must supply a pressure gauge and provide inflation for a drysuit (where applicable) and a wing.
- e. Sidemount harness: A diver's sidemount setup should be back-mounted and minimalist in nature. Wing size and shape should be appropriate to the cylinder size(s) employed for training.

### **Additional Course-Specific Equipment**

- a. Where required, back gas and stage cylinders with proper cylinder marking (2.2, e) will also be utilized in accordance with the GUE General Training Standards, Policies, and Procedures document and configured in line with GUE protocols.

- b. When drysuit inflation systems are applicable, they should be sized appropriately for the environment; small tanks are placed on the left side of the backplate with larger supplies affixed to the diver's left back gas tank.
- c. Underwater lights:
  - i. When required, backup lights should be powered by alkaline batteries (not rechargeable) and stowed on the D-rings at a diver's chest (except when diving sidemount).
  - ii. Backup lights should have a minimal amount of protrusions and a single attachment at the rear.
  - iii. Backup lights should feature a twist-on/off switch for operation
  - iv. The primary light should consist of a rechargeable battery pack and be fitted with a Goodman-style light handle.
  - v. When burn time requirements create the need for an external battery pack, it should reside in a canister mounted on the diver's right hip.
- d. Guideline devices, as required during cave diving activities:
  - i. A primary reel is required for all cave diving and provides a minimalist form factor with a handle designed to support a Goodman or "hands free" handle operation. The primary reel must contain at least 150 ft/45 m of line.
  - ii. A safety spool is required for each diver while cave diving and must contain at least 150 ft/45 m of line.
  - iii. A jump or gap spool is required during Cave 2 diving and must contain at least 75 ft/23 m of line.
- e. Where required, GUE-approved DPV must:
  - i. Be a tow-behind style with adjustable speed and clutch mechanism.
  - ii. Include an attached cord at the back with bolt snap to be clipped on the front crotch strap D-ring.
  - iii. Include a leash attached to the front to be used for towing.