

# CAVERN DIVER STANDARDS

ACUC

## Points of special consideration

- *This is an ACUC restricted specialty (both students and instructors must comply with specific training)*
- *Penetration is limited to the use of 30% of the breathing gas*
- *Minimum prerequisite to take this course is ACUC Advanced Diver.*
- *This course must not be confused with the Cave Diver course*



## FOREWORD

The ACUC Cavern Diver course is an ACUC specialty within the ACUC training ladder. This course can be taught, evaluated and certified by any ACUC Open Water Instructor who also holds the ACUC Cavern or Cave Specialty Instructor certification. The main characteristics of this course is that the students that successfully complete the course, will be properly trained and able to dive, without supervision, accompanied by other cavern divers, in caverns within the limits of light penetration. This course does not qualify divers to dive in caves.

This is an ACUC International standard and therefore is always subject to the different national or local legislations. In cases where legislations exist that differ from this standard, the ACUC country or area delegation if it exist, must request in writing to the ACUC main office (Canada or Spain) a “**Deviation**” from this standard to satisfy the legislation of the area, supporting their request with the appropriate documentation. Deviations, if requested, to be considered valid, must appear at the end of each specific standard document (Point 12)

In cases where the local or national legislations are more restrictive than the ACUC Standard, then the local legislation will prevail, but if the ACUC Standard is more restrictive, then the ACUC Standard will prevail, because by complying with the more restrictive ACUC Standard, logically the local legislation will be also complied with. Updates to this standard, if any, are shown in point 13 of this document.

Regarding required training hours, none are specified because these could vary depending on many factors (number of students, diving environment, etc), therefore the training hours needed are de-

pendant on the fulfilment of learning objectives. In the ACUC manuals and documents where hours are specified, these are only to be considered recommendations.

## 1. SCOPE

This Standard specifies safety related minimum competencies to be achieved in recreational scuba training at the ACUC Cavern diver specialty. This Standard applies only to contractual training and certification in recreational scuba diving.

## 2. DEFINITIONS

For the purposes of this standard and any other standard referenced as acuc-st-xxx, the following definitions apply. Please note that not all terms shown next might appear in this specific standard.

**2.1 ACUC:** Entity providing recreational scuba diving training systems and certification.

**2.2 Basic equipment:** Equipment consisting of the following items:

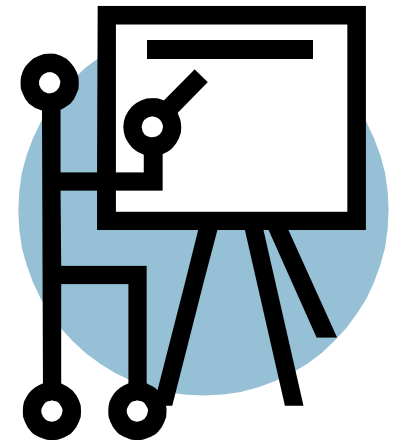
- Mask
- Fins
- Snorkel

**2.3 Breathing gas:** Appropriate mixture of oxygen and nitrogen.

**2.4 Cave:** Overhead environment where natural light does not penetrate and entry/exit points are not always visible.

**2.5 Cavern:** Overhead environment where natural light penetrates and entry/exit points are always visible

**2.6 Certification:** Confirmation that a student has completed all requirements of a course according to this Standard, as issued by ACUC. Note: Junior certifications



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## 2. Definitions (continued)

issued to those between 12 and 16 years old mean that they must always dive with a certified adult and are restricted to a maximum depth of 25 meters (80 feet).

**2.7 Cold water:** Water less than 10°C from its highest average temperature or water of 10°C or less

**2.8 Competencies:** What a diver can do once certified

**2.9 Confined spaces:** condition that applies when there is no direct access to the surface, such inside a wreck, cave, etc.

**2.10 Confined water:** Swimming pool with a depth appropriate to the activity, or body of water that offers similar conditions (maximum depth 6 meters)

**2.11 Diving equipment:** Equipment consisting of the following items:

- Mask,
- Fins,
- Snorkel,
- Cylinder,
- Regulator,
- Alternative breathing gas system, which could range from a simple octopus system to a duplicate breathing system with a separate breathing gas supply,
- Cylinder-support-system and buoyancy control device including (if appropriate) a quick release weight system,
- Submersible pressure gauge (breathing gas pressure monitor),
- Means to measure depth and time and to safely limit exposure to inert gas,
- Diving suit (if appropriate).

Note: Specific environments may require appropriate additional equipment (e.g. an underwater navigational aid, knife/cutting device).

**2.12 Dry specialty:** Specialty course where no water training takes place, such as for example, First Aid, Oxygen Administration, etc.

**2.13 Knowledge levels:**

- Basic: knows how...
- Intermediate: knows how and why...
- Advanced: knows how, why and also, knows how to teach it...

**2.14 Non certification scuba course:** Scuba course where the participants do not receive an ACUC certification at the end of the course, such as for example, scuba introduction, scuba refreshment, scuba buoyancy, etc

**2.15 Open water:** Body of water significantly larger than a swimming pool offering conditions typical of a natural body of water encountered in the region where training takes place.

**2.16 Prerequisites for training:** What a diver needs or conditions to be met prior to start training.

**2.17 Reduced visibility:** condition that applies when diving at night or when visibility is less than an arm's length, for whatever the reason.

**2.18 Scuba:** Self-contained under-water breathing apparatus.

**2.19 Scuba instructor:** A qualified individual, sanctioned by ACUC to teach, evaluate and certify divers.

**2.20 Theoretical knowledge:** knowledge imparted in a dry environment (classroom, pool deck, etc).

**2.21 Training Cavern dive:** Cavern training experience under direct supervision of a qualified instructor, comprising at least the following activities:

- briefing
- preparation to dive
- pre-dive checks
- entry into water
- descent procedures
- under-water activity
- ascent and surfacing procedures
- exit from water
- debriefing
- post dive procedures
- recording the dive.

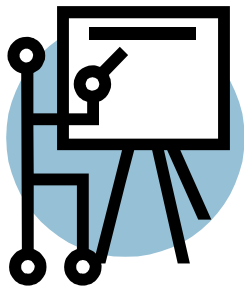
**2.22 Water skills:** knowledge imparted inside a wet environment (pool water, sea water, etc)

## 3. COMPETENCIES

An ACUC Cavern diver shall be trained to have sufficient competencies by knowledge, skill and experience to dive in a cavern with other cavern or cave divers of any level. ACUC Cavern Divers shall dive within the following parameters

- Dive to a maximum depth of 40 meters / 130 feet .
- Dive only when appropriate support is available,
- Dive under conditions that are equal or better than the conditions where they were trained.
- Dive to a maximum penetration dictated by the consumption of 30% of his breathing gas

If accompanied by an ACUC **Cave** Diving instructor, certified ACUC Cavern divers may gain progressive experience beyond these parameters (except depth) and develop competency in managing more challenging diving conditions designed to lead to higher qualifications.



*“Divers must know which are the limitations of their certification”*



### 3. Competencies (continued)

Where further instruction is required this can only be provided by a suitably qualified ACUC instructor. Where only further experience is required, this may be supervised by an ACUC Divemaster with the Cavern Diving specialty, or similar.

## 4. PREREQUISITES FOR TRAINING

In order to qualify for enrolment in a course according to this Standard the student shall meet the following prerequisites:

**4.1 Minimum age:** 16 years old. Parental or legal guardian consent is required when the applicant is a minor. ("minor" definition will be according to each country's legislation).

**4.2 Health requirements:** Students shall be medically screened as suitable for recreational diving by means of an appropriate medical examination, or if the country's legislation where the course is taken allows it, an appropriate questionnaire. In any case of doubt, students shall be referred to proper medical resources. If the student is not examined by a physician, the student should be obliged to confirm by signature a written information given by the instructor on diseases or physical conditions which may be a diving related risk. Students shall be advised of the importance of appropriate regular medical examinations. Students which may suffer from claustrophobia may not take this course.

**4.3 Minimum previous certification:** ACUC Advanced Diver or similar.

## 5. TRAINING RATIOS

- **Theory (classroom or pool):** No limit
- **Confined Water:** 8 students per Instructor, with an additional 4 students per Assistant Instructor or Divemaster, with an absolute maximum of 16 students.
- **Cavern:** 2 students per Instructor, with an additional 2 students per Assistant Instructor or Divemaster, with an absolute maximum of 4 students.

## 6. INTRODUCTORY INFORMATION

The following information shall be made available to the students prior to, or during the first class meeting.

- Prerequisites according to 4,
- Limitations of eventual qualification,
- Scope of course,
- Course procedures,
- Costs, insurance and contractual issues according to national regulations,
- Equipment requirements,
- Certification requirements according to 10,
- Diving related legislation and legal requirements.

## 7. THEORY KNOWLEDGE

The course content, related to theory knowledge is:

### 7.1 Cavern Diving Procedures.

### 7.2 Psychological issues

### 7.3 Equipment issues. Special equipment, such as:

- Alternate air source
- No CO2 cartridge for vest and no snorkel
- Primary reel with length according to intended dive
- Safety reel with minimum 40 metres guideline
- 2 (main and backup) underwater lights
- Directional line arrows
- Weights considerations

### 7.4 Communication methods

### 7.5 Swimming techniques

### 7.6 Physiology issues:

- Breathing techniques
- Stress handling

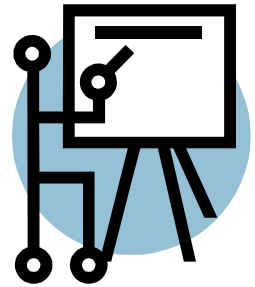
### 7.7 Cavern environment and conservation

### 7.8 Risk situations:

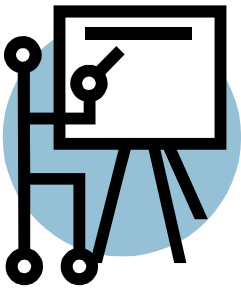
- Accident Prevention
- Recognition of Problems
- Equipment problems
- Self Help
- Buddy Help
- Panic
- Fatigue

### 7.9 Dive Planning:

- Conditioning
- Pre-Dive Planning
- Pre-Dive Preparation
- Preparation on Site
- Dive Plan
- Full Decompression Tables and Procedures
- Air Consumption



*“Minimum age for this course is 16 years old.”*



*“All skills must be evaluated by an ACUC Cavern or Cave diving Instructor, who must be in the water in each session”*

## 8. SCUBA SKILLS

The course content, related to Scuba skills is:

**8.1 Confined water scuba skills:** Students shall be able to perform the following skills.

### Land skills:

- Deployment of a guideline
- Following a guideline
- Communications
- Deploying directional markers
- Pre dive planning
- Equipment check

### Confined water skills:

- Bubble check
- Swimming techniques
- Buoyancy control
- Stress recognisment
- Deployment of a guideline
- Following a guideline with eyes open and closed
- Communications
- Deploying directional markers
- Buddy breathing (air sharing) with eyes open and closed while following a guideline
- Removal and replacement of mask while following a guideline
- Underwater regulator recovery
- Basic but often instrument monitoring

### Cavern scuba skills:

- Deployment of a guideline
- Following a guideline
- Communications
- Deploying directional markers
- Buddy breathing (air sharing) while following a guideline
- Removal and replacement of mask while following a guideline.

*Note: Special safety precautions are to be taken during the removal and replacement of mask in open water, specifically in those areas with cold water*

- Underwater regulator recovery (under supervision 1 on 1 by Instructor)
- Use of back up light following a guideline
- Basic but often instrument monitoring

## 9. PRACTICAL TRAINING PARAMETERS

**9.1** All underwater skills in confined water shall be introduced, directly supervised and evaluated by an ACUC instructor, who shall be in the water during each session. The scuba instructor shall be in direct control of students throughout all sessions.

**9.2** Before participating in Cavern dives a student shall have demonstrated sufficient theoretical knowledge and scuba skills in confined water to be able to perform the Cavern dives in the prevailing conditions.

**9.3** The maximum depth during training dives shall not exceed 25 meters / 80 feet

**9.4** Penetration shall not exceed the use of 30% of the available breathing gas.

**9.5** All Cavern dives shall be conducted during daylight hours.

**9.6** During Cavern dives the student shall at least be equipped with diving equipment according to points 2.11 and 7.3.

**9.7** All under-water skills in Cavern shall be introduced, directly supervised and evaluated by an ACUC Cavern or Cave diving instructor. The scuba instructor shall be in the water and in charge of each Cavern dive. During the first 4 Cavern dives the scuba instructor shall be in direct control of students throughout the dives. During subsequent Cavern dives students may be supervised by a qualified assistant except when skills are being performed or evaluated.

**9.8** As per clause 5, the absolute maximum number of students per scuba instructor in ideal conditions for supervision and escorting under water is two. The maximum number of students per qualified assistant for supervision and escorting under water is two. At no time shall a student in or under water be left without supervision. Under no circumstances certified divers and students in a course can participate in the same dive, under the supervision of the same Instructor.

**9.9** Prior to Cavern dives the scuba instructor shall prepare an “emergency plan”. In the immediate vicinity of the dive site there shall be:

- A suitable first aid kit
- An emergency oxygen unit with a capacity of delivering at least 15 l/min. for at least 20 min.
- Communication system suitable for alerting emergency services.

**9.10** The scuba instructor shall cancel or abort the Cavern dive if environmental conditions or a student’s physical or mental condition make this necessary.

**9.11** A maximum of 2 daily training dives will be allowed



## 10. ASSESTMENT

The assessment and evaluation will consider the following:

**10.1 Knowledge:** The student shall demonstrate, by means of the written test supplied by ACUC, knowledge of scuba diving theory according to 7 and knowledge of skills according to 8.

**10.2 Scuba Skills:** The student shall satisfactorily demonstrate to an ACUC Cavern or Cave diving instructor, the scuba skills according to 8.

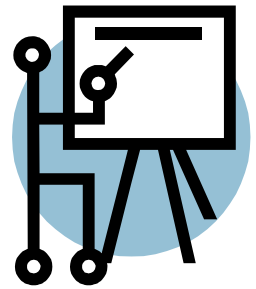
Instructors can, if they wish, offer additional tests to the student, however, the ACUC provided test must be done.

## 11. TRAINING DIVES

To be certified students shall complete at least **four** qualifying training Cavern dives under the direct supervision of an ACUC instructor. The underwater (bottom time) total duration of these qualifying Cavern dives shall be at least 80 min, except in cases of cold water where 60 minutes will suffice .

## 12. DEVIATIONS

None requested



### Note regarding assessment and evaluations:

If for some reason, the student can not do a written test, then the Instructor can do an oral examination to the student based on the written test provided by ACUC and if this is the case, the Instructor will transfer the student's oral answers to the written test. Whatever the case, the written test must be completed, either directly by the student or indirectly by the Instructor, using the student's oral answers.