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Scuba diver training 2014 curriculum

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Preface

This curriculum was compiled taking into account the training schedule valid up to now as well as EN ISO 24801-1, EN ISO 24801-2, EN ISO 24801-3, EN ISO 24802-, EN ISO 24802-2 and FK-V BGI.II Nr. 13/2007.

The EOBV ("Erste Österreichische Berufstauchlehrer Verband") aims to certify only best trained divers even if divers are asked more than the minimum requirements listed in the above regulations and standards.

EOBV scuba diving instructors (TL) and students (TS) commit themselves to successfully complete all diving activities undertaken in the name of the association in compliance with this curriculum.

The frighteningly high number of yearly diving accidents requires a conscientious training of high quality as well as the consideration of the latest technical aspects.

This includes in particular:

The mandatory use of two different air delivery systems in water with an ambient temperature of less than 10° Celsius.

Explanations

Equivalent training:

Training with a different association is to be regarded as equivalent if this organization has at least the same requirements for a certain level of training as the EOBV.

e.g. Autonomous diver according to EN ISO 24801-2 equals EOBV diver 2**. In order to be approved as diver 2 ** divers of other organizations must prove evidence for 30 dives as well as for the following special topics: orientation, night diving, altitude diving, oxygen application.

Cross-over:

Means the transfer from the training system of an organization to the training system of another organization. A cross-over to EOBV is possible in the case of equivalence and after an exam showing that the diver has met or exceeded the requirements of the respective level.

EN ISO - Norms	FK-V BGBl. II Nr. 13/2007	EOBV
EN ISO 24801-1 Supervised diver		Diver 1 star 1* diver
EN ISO 24801-2 Autonomous diver		Diver 2 stars 2** diver
		Diver 3 stars 3*** diver
EN ISO 24801-3 Dive leader		Diver 4 stars 4**** diver
	Signal person function	Dive instructor assistant TL assistant
EN ISO 24802-1 Scuba instructor level 1	Research and engineer dive work	Scuba dive instructor 1 star TL*
EN ISO 24802-2 Scuba instructor level 2	General dive work	Scuba dive instructor 2 stars TL**
EN ISO 24802-2 Scuba instructor level 2 exceeding the qualifications of level 2		Scuba dive instructor 3 stars TL***
EN ISO 24802-2 Scuba instructor level 2 exceeding the qualifications of level 2 Instructor trainer		Scuba dive instructor 3 stars TL*** Instructor Trainer, IT
		Scuba dive instructor 3 stars TL*** Instructor Trainer, IT Head of training, AL Training Director, TD

EOBV scuba diving curriculum

1. Introduction

EOBV scuba training aims at training a diver from beginner's level to a certified 4**** diver who is familiar with all special topics of diving theoretically as well as in practice. The last level of training provides a solid basis and is a prerequisite for further training as a dive instructor assistant (signal person function), scuba dive instructor 1* (research and engineer dive work) and scuba dive instructor 2** (general dive work).

2. Training – short-term aims and qualifications

2.1. Diver 1* (supervised diver according to EN ISO 24801-1)

Training for diver level 1* aims at the ability of managing oneself and one's equipment without any problems during a standard dive (e.g. on vacation) in a maximum depth of 12 m. This means being capable of autonomous trimming/ control of buoyancy, a reliable reaction to signs of the dive leader, clearing your scuba mask of water, switching to an alternate air source or, in case of need, sharing air, a command of underwater signs, rescuing an unconscious diver from a depth of 5m, and completing a minimum of 4 dives.

In addition a diver 1* must be able to snorkel 500m on the surface in full diving equipment, to dive a distance of 30m, to dive down to and put on diving gear in a depth of 5m and to hold his breath underwater for 30 seconds.

A diver 1* must be able to assemble his gear correctly and to check the functions for defects without having to be able to fix them.

He must have a theoretical knowledge of the most important physical and medical basics and their effects on the body during a dive and behave accordingly.

A diver 1* is qualified to dive worldwide with a diver 4**** or with a higher qualification. He must be aware that (with the exception of dives with a scuba dive instructor 2** or a higher qualification) he is trained for dives up to a depth of 12m and this limit is to be respected.

2.2. Diver 2 (autonomous diver according to EN ISO 24801-2)**

Training for diver 2** aims at the ability to dive autonomously, safely and in a controlled way with a partner of the same qualification (2**) in a maximum depth of 20m. As a prerequisite the diver must have successfully completed the training for diver 1* or an equivalent training.

In addition to the training objectives of a diver 1* - with an extension of the depth range to 20m – a diver 2** must be able to master the basics of planning a dive, to manage open water ascents sharing air and to guide dives back to the departure point with or without the use of a compass. A major element of this training is the partner/ buddy check.

Rescue of an unconscious diver is carried out from a depth of 10m.

The special topics orientation, night diving and diving with limited visibility, high altitude diving and oxygen application must be dealt with. Besides, there must be 26 more dives completed.

In addition a diver 2** must have the fitness to snorkel 1000m on the surface in full diving equipment, to dive a distance of 40m, to dive down to and put on diving gear in a depth of 8m and to hold his breath underwater for 45 seconds.

A diver 2** must be able to assemble his own and his dive partner's equipment correctly, to check its functions and to realize any possible defects and fix them (with the exception of technical defects which may only be repaired by qualified staff). He must be familiar with the most important basics of equipment maintenance.

He must have a theoretical knowledge of the relevant physical and medical basics and their effects on the body during a dive and behave accordingly. Besides, he must be able to plan and calculate no decompression, decompression and repetitive dives. Regarding the technical aspects he must be able to explain the function of the individual equipment components (jacket, regulator, depth gauge, computer etc.).

A diver 2** is qualified to dive autonomously worldwide with a diver 2** or with a higher qualification. He is qualified to rent equipment worldwide. He must be aware that with the exception of dives with a scuba diving instructor 2** or with a higher qualification he is qualified to dive to a depth of 20m and has to respect this limit.

2.3. Diver 3***

Training for diver 3*** aims at the ability of completing dives to a maximum depth of 30 m safely and in a controlled way. A successfully completed course for diver 2** or an equivalent is a prerequisite; the special topics rescue diving, deep diving, dry suit diving, drift diving must be covered and 40 more dives must be successfully completed. Apart from preparation for guiding groups the training focuses on deep dives to 30 m, the dangers of decompression and respecting decompression ceilings. A diver 3*** must be able to guide a group back to the departure point safely and irrespective of visibility conditions with and without a compass. He must be able to safely return to the surface with a partner from a depth range of 30m breathing from

an octopus or sharing air and he must be able to rescue an unconscious diver from a depth of 15m.

In addition a diver 3*** must have the fitness level to snorkel 1500m on the surface in full diving equipment, to dive a distance of 50m, to dive down to and put on diving gear in a depth of 10m and to hold his breath underwater for one minute.

In addition to the knowledge of all the laws of physics and medicine relevant for diving and their practical use he must also know the function of a regulator and a compressor and be able to explain it.

A diver 3*** is qualified to dive autonomously worldwide with a diver 2** or with a higher qualification and to lead these dives. He must be aware that with the exception of dives with a scuba diving instructor 2** or with a higher qualification he is qualified to dive to a depth of 30m and has to respect this limit. Besides, during the dive he is responsible for divers with a lower qualification.

2.4. Diver 4** (dive leader according to EN ISO 24801-3)**

The aim of the training for diver 4**** is the ability of safe and controlled guiding and completing dives to a maximum depth of 40m.

A successfully completed course for diver 3*** or an equivalent training is a prerequisite. The special topics search and rescue, boat diving, wreck diving and ice diving must be covered and a minimum of 40 more dives (including the special topics) must be completed.

The training focuses on the safe guiding of groups to a maximum depth of 40 m under difficult conditions. The main training area shifts to partner check and partner safety.

A diver 4**** must be able to guide a group of divers back to the departure point in all conditions. He must be able to assess the dive site and the group before the dive and plan the dive accordingly. In addition he must be able to evaluate the diving behavior of his dive partners and react accordingly.

He must be able to return to the surface safely with a partner from a depth range of 40m using an octopus or sharing air, and to rescue an unconscious diver from a depth of 20m without putting himself in danger. He must be able to adjust his diving behavior to his partner and control the dive in all conditions at all times to be able to lead the group safely to the shore.

Furthermore a diver 4**** must have the physical fitness to snorkel 2000m at the surface in full diving equipment, to dive 50m, to dive down to and put on diving gear in a depth of 10m and to hold his breath underwater for 1 minute 15 seconds.

Theoretically he must be informed about all aspects of recreational diving (physics, medicine, practice, equipment etc.) and be able to explain them.

A diver 4**** is qualified to guide a maximum of 4 divers 1* or a higher level if he is 18 years old.

3. Teaching contents and methodical-didactical conditions

3.1. Methodical-didactical conditions

The scuba diving instructor is responsible for completing all the teaching aims listed below in an atmosphere which is suitable for the situation of the student, and for reaching the required teaching objective in a stress free environment. The scuba diving instructor is free to integrate one or more training objectives in one dive. However, he must plan the dive responsibly and under consideration of external circumstances and he must not fall below the minimum of dives required in the EOBV regulations.

External circumstances are the situation at the dive site, visibility in the water, the temperature in and outside the water, ground conditions, observance of surface intervals for recovery of the student and equipment suited to the circumstances (like cold protection).

3.2. Training goals for diver 1* (supervised diver)

A diver 1* is to reach the following goals at the end of the course:

3.2.1. Practical aims:

Assemble and dismantle the necessary equipment correctly

Put on the equipment correctly

Check the equipment functions and realize defects

Put on and empty the dive mask correctly over and underwater

Put the regulator into his mouth correctly over and underwater

Correct fin swimming on the surface and underwater

Share air correctly with a partner or using his own octopus or second regulator

Stationary air sharing and air sharing in movement with possible ascent over ground

Reliable buoyancy control with a buoyancy aid, stationary and in movement, to avoid ground contact
Recognize and correctly answer underwater signs
Correct rescue of an unconscious diver from a depth of 5m and subsequent rescue from the water
Correct initiation of first aid measures and knowledge of the rescue chain
Snorkel 500m in complete diving equipment
Dive 30m
Dive down to and put on dive equipment placed in a depth of 5m
Hold his breath underwater for 30 seconds

3.2.2. Theory

The Boyle-Mariotte law
Dalton's law
Henry's law
Archimedes law
Calculation and planning of air consumption
Handling a dive table
Function of breathing
Rigid and semi-elastic body cavities filled with air
The function of blood circulation
Barotraumas and how to avoid them
Seeing and hearing under water
Effects of air and water pressure
Knowledge of the causes of DCS and how to avoid it
Thermal conductivity underwater

3.3. Training goals for diver 2 (autonomous diver)**

A diver 2** is to reach the following goals at the end of the course:

3.3.1. Practical goals:

Resistance to a depth of 20m
Reliable completion of all basic skills of a diver 1* to a depth range of 20m
Reliable buoyancy control in open water descents and ascents to a depth range of 20m
Reliable buoyancy control and compliance with decompression ceilings over ground and in open water
Reliable and safe behavior when leading a dive
Open water ascents sharing air or using an octopus
Guiding a diver of the same qualification level back to the departure point using natural orientation (terrain features) and compass

Compass orientation in open water
Rescue of an unconscious diver from a depth of 10m
Snorkel 1000m in complete diving equipment
Dive 40m
Dive down to and put on dive equipment placed in a depth of 8m
Hold his breath underwater for 45 seconds

3.3.2. Theory in addition to 3.2.2.

Plan a dive in various conditions
Correct briefing
Exact planning of a dive with a dive table considering the necessary air supply
Knowledge regarding the construction and function of a regulator
Knowledge regarding the construction and function of a buoyancy system
Knowledge regarding the construction and function of a pressure gauge
Knowledge regarding the construction and function of a depth gauge
Knowledge regarding the construction and function of a dive computer
Knowledge regarding the construction and function of a scuba tank
Knowledge regarding the construction and function of ABC equipment
Knowledge regarding the rules for maintenance of the equipment
More profound knowledge regarding the effects of decompression dives
More profound knowledge regarding DCS, barotraumas and how to avoid them

3.4. Training goals for diver 3***

A diver 3*** is to reach the following goals at the end of the course:

3.4.1. Practical goals:

Resistance to a depth of 30m
Reliable completion of all basic skills of a diver 2** to a depth range of 30m
Reliable buoyancy control during night dives and/ or in limited visibility
Reliable buoyancy control in open water descents and ascents to a depth range of 30m
Reliable and safe behavior when leading a dive with a diver 1*
Open water ascents sharing air or using an octopus in a depth range of 30m
Guiding a group of divers back to the departure point using natural orientation (terrain features) and compass by night, limited visibility or current
Correct behavior in currents
Rescue of an unconscious diver from a depth of 15m
Snorkel 1500m in complete diving equipment
Dive 50m
Dive down to and put on dive equipment placed in a depth of 10m

Hold his breath underwater for 60 seconds

3.4.2. Theory in addition to 3.3.2.

Knowledge of all physical and medical dive laws (see 1* and 2**) and their practical application when diving

Knowledge of the construction and function of a breathing air compressor

Ability to explain all parts of a diving equipment and their functions

3.5. Training goals for diver 4** (leader of a dive group)**

A diver 4**** is to reach the following goals at the end of the course:

All special topics must be certified.

3.5.1. Practical goals

Resistance to a depth of 40m

Reliable completion of all basic skills of a diver 3*** to a depth range of 40m

Reliable buoyancy control in open water descents and ascents to a depth range of 40m

Open water ascents sharing air or using an octopus in a depth range of 40m

Rescue of an unconscious diver from a depth of 20m

Snorkel 2000m in complete diving equipment

Dive 50m

Dive down to and put on dive equipment placed in a depth of 10m

Hold his breath underwater for 75 seconds

3.5.2. Theory in addition to 3.4.2.

Is able to explain all areas (medicine, physics, technology, practice).

Special topics

Night diving – limited visibility diving

Objectives

Diving at night and in poor visibility requires special abilities and skills. This special topics provides the necessary knowledge for carrying out night and limited visibility dives comfortably and safely.

Contents

Diving with a lamp
Diving with a bridle
Diving with a guide line
Communication with lamp and line signals

Dives

Number: 3
Dive time: no less than 30 minutes
One dive must have a minimum depth of 20.
One dive must be carried out with lines.

Oxygen application

Objectives

Oxygen application is a training on the beginner's level where divers and qualified non-divers learn to recognize possible injuries caused by diving better and to provide emergency oxygen aid until the arrival of local emergency medical services and/ or until the injured diver can be transported to the nearest medical facility.

Contents

Equivalent to DAN regulations.

Altitude diving – diving above sea level

Objectives

In this special the diver acquires knowledge about the problems of diving in higher places in order to be able to plan and carry out such dives autonomously.

Contents

Medical aspects

Diving with a high altitude dive table

Calculation of the fictitious dive depth

Calculation of the decompression ceilings

Dives

Number: 3

Dive time: no less than 30 minutes

One dive must have a minimum depth of 20m.

One dive must be a repetitive dive.

Orientation

Objectives

In this special the diver acquires the basic knowledge and ability to stay oriented during a dive and to navigate using various methods and tools.

Contents

Natural navigation

Navigation by compass

Setting the bezel

Diving a triangular course

Calculation of GPS co-ordinates

Dives

Number: 3

Dive time: no less than 30 minutes

One dive must be carried out using natural navigation.

Two dives must be carried out using compass navigation.

Rescue diving

Objectives

Being well prepared for an emergency can save lives! This special provides the skills which may mean the difference between life and death in an emergency: recover and rescue divers who have had an accident.

Contents

Recognizing and avoiding stress and panic

Surfacing an unconscious diver

Getting out of a stranglehold

First aid

Rescue chain

Dives

Number: 4

Dive time: no less than 30 minutes

One dive must have a minimum depth of 20m.

Deep diving -- diving in depths of more than 20m

Objectives

In this special for advanced divers they can acquire knowledge about special medical factors, increasing dangers and the special preparation of diving equipment for deep dives.

Contents

Recognize and avoid nitrogen narcosis (rapture of the deep)

Choice of equipment for deep dives

Decompression dives

Dives

Number: 4

Dive time: no less than 30 minutes

One dive must reach a depth of 40m and must include 3 decompression stops.

Two dives must reach a minimum depth of 30m.

Dry suit diving

Objectives

Changing to dry suit diving needs special skills regarding use, maintenance and care which are dealt with in this special.

Contents

Function of a dry suit

Buoyancy in dry suit diving

Maintenance and care of a dry suit

Dives

Number: 3

Dive time: no less than 30 minutes
One dive must reach a minimum depth of 20m.
One dive must reach a minimum depth of 30m.

Diving in currents – drift diving

Objectives

The diver acquires the basic knowledge and skills to recognize dangers when diving in currents and to plan and carry out such dives safely using various aids.

Contents

How do currents occur
Extra equipment
Carrying out current dives

Dives

Number: 2
Dive time: no less than 30 minutes

Search and rescue

Objectives

In this special the diver acquires the basic knowledge and skills to search for objects underwater and to retrieve them using various aids.

Contents

Search methods
Diving with line signals
Working with a lifting/ salvage balloon

Dives

Number: 4
Dive time: no less than 30 minutes
One object weighing 200kg or more must be retrieved from a minimum depth of 20m.

Boat diving

Objectives

The diver acquires the basic knowledge and skills to recognize dangers when diving from a boat and to plan and carry out such dives safely using various aids.

Contents

Diving behavior
Behavior in shipping traffic
Knowledge of boats

Dives

Number: 2
Dive time: no less than 30 minutes

Wreck diving

Objectives

In this special the particular problems and dangers of wreck diving are made clear in order to enable the diver to carry out wreck dives safely and without risk. This topic also includes dives in and near flooded buildings or industrial plants.

Contents

Planning wreck dives
Danger analysis
Diving with a guide line

Dives

Number: 4
Dive time: No less than 30 minutes
One dive must be done into a wreck.
One dive must include two decompression stops.

Ice diving – cold water diving

Objectives

In this special the particular problems and dangers of ice diving are made clear in order to enable the diver to plan and carry out such dives safely and without risk.

Contents

Planning ice diving
Technical aspects
Medical aspects
Ecological aspects

Diving with a guide line

Dives

Number: 3

Dive time: no less than 30 minutes

One dive must include a rescue exercise.

CURRICULUM DIVER TRAINING

THEORY

subject	1star EN ISO 24801-1 Supervised diver	2 star EN ISO 24801-2 Autonomous diver	3 star	4 star EN ISO 24801-3 Group leader	Dive instructor assistant Signal person BGBl. 13/2007	Dive instructor 1 star Research and engineer diver BGBl.13/2007	Dive instructor 2 star General dive work BGBl. 13/2007	Total of lessons (one lesson = 50 minutes)
special topics		Night diving Oxygen application High altitude diving orientation	Rescue diving Deep diving Dry suit diving Current/ drift diving	Search and rescue Boat diving Wreck diving Ice diving		EN ISO 24802-1 Scuba instructor Level 1	EN ISO 24802-2 Scuba instructor Level 2	
calculation	2	2	2	2	8	2	2	20
drawing		2	2	2	4	5	5	20
diving equipment accessories tools	4	3	3	4	10	6	5	35
working studies	1	5	5	7	18	4	5	45
medicine	2	5	8	10	26	5	5	61
legal norms		2	2	2	7	3	2	18
education						2	4	6
lessons	9	19	22	27	73	27	28	205
total of lessons	9	28	50	77	150	177	205	

PRACTICE

Mandatory dives, min. 30min/dive	1 star	2 star	3 star	4 star	Dive instructor assistant	Dive instructor 1 star	Dive instructor 2 star	total
Minimum dives	4	26	40	40	40	50	50	250
Dive hours	2	13	20	20	20	25	25	125
Hours total	2	15	35	55	75	100	125	

4. Dive instructor assistant (signal person)

Dive instructors 3*** under supervision of the head of training are qualified to train dive instructor assistants.

A successfully completed 4**** course or an equivalent training is a prerequisite; the minimum age is 19 years. An additional 40 dives must be completed. Proof of a first aid course (not older than 2 years) must be shown.

At the end of the training an exam must be taken in front of an examination board consisting of the head of training and a minimum of 3 more dive instructors 3***.

The exam must contain all areas on the same scale.

Examination records are mandatory.

5. Dive instructor 1* (research and engineer dive work)

Training for dive instructor 1* takes place in the context of dive instructor seminar part one under the direct supervision of the head of training.

The prerequisite is the completed training for dive instructor assistant or an equivalent training, and a minimum age of 21 years.

A minimum of 200 dives must be completed.

A dive instructor 1* is qualified for training according to EN ISO 24802-1.

At the end of seminar part one there is a mandatory exam in front of an examination board consisting of the head of training and a minimum of 3 more dive instructors 3***.

The exam must contain all areas on the same scale.

Examination records are mandatory.

6. Dive instructor 2 (general dive work)**

Training for dive instructor 2** takes place in the context of dive instructor seminar part two under the direct supervision of the head of training.

The prerequisite is the completed training for dive instructor 1* or an equivalent training, and a minimum age of 21 years.

A minimum of 250 dives must be completed.

A dive instructor 2** is qualified for training according to EN ISO 24802-2.

At the end of seminar part one there is a mandatory exam in front of an examination board consisting of the head of training and a minimum of 3 more dive instructors 3***.

The exam must contain all areas on the same scale.

Examination records are mandatory.

7. Dive instructor 3***

Dive instructors 3*** support the head of training and are appointed by the committee on the basis of their merits.

8. Dive instructor 4****

Committee and heads of department for their term of office. Are downgraded to dive instructor 3*** upon termination of their terms of office.

Exception: Dive instructor 4**** h.c. is appointed on the basis of long years of merits for the association.

CLOSING WORDS

The lessons listed in the curriculum are to be understood as minimum requirements and must not be reduced in any way.