

Marine Science and Technology 1994-1998
Sub-area D. Supporting initiatives
2. Standards for training and work
- Training, working and safety standards for scientific divers -

COURSE/SEMINAR FOR THE INSTRUCTORS OF EUROPEAN SCIENTIFIC DIVERS

Co-ordinator:

Marco Abbiati - International School for Scientific Diving, University of Pisa, IT

Financial support:

European Commission, DGXII, MAST

Institutions involved:

CMAS - World Underwater Federation
EUF - European Underwater Federation
Institute of Marine Biology of Crete
Marine Biological Association of the UK
University College of Galway
University of Marseille
University Marine Biological Station Millport
University of Pisa
University of Urbino
University of Zaragoza

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COURSE/SEMINAR FOR THE INSTRUCTORS OF EUROPEAN SCIENTIFIC DIVERS

The course will be held at Cavo (Isola d'Elba, ITALY), 1-11 May 1997.

The Course is being organised by the Scientific staff of the International School for Scientific Diving and by the Department of Human and Environmental Sciences of the University of Pisa under the EC, DG XII, Science Research and Development, MAST programme. Representatives from European research institutions will be involved in the Course as invited lecturers.

Prof. Paul Ryan (member of the Scientific Committee of the CMAS - World Underwater Federation) will be invited as Supervisor for Scientific Diving instruction.

Mr. D. Ellerby (European Underwater Federation, British Sub-Aqua Club) will be invited as Supervisor qualified for training of Diving Instructors and will supervise the entrance exam for the participants who want to get the Advanced European Scientific Diver Certificate.

A representative from the Commission staff will be invited as Supervisor from DG XII.

Experts in Scientific Diving from European and non European countries will be invited to give lectures and to train the participants on the course in the use of specific research equipment and techniques.

The Course is open to a maximum of 26 participants from EU and EEA countries. Accommodation at Cavo and costs connected with the Course activities (including dives) will be covered by the Organisers, travel expenses will be the responsibility of the participants. Participants on the Course have to demonstrate that they fulfil the standard requirements proposed by the EC, DGXII, MAST for the Advanced European Scientific Diver level (for details see the photocopies of the draft standards enclosed). Two weeks before the start of the Course a copy of the participants diving certificates, medical fitness certificate and insurance has to be sent to the organiser of the Course. A check of the logbook for scientific diving will be done at the beginning of the Course.

Each participant on the Course will have to give at least one lecture dealing with the topics listed in the draft standard for the Advanced European Scientific Diver (photocopy enclosed). Moreover, each participant will act as dive team leader at least once during the course activities. Teaching before dives will be devoted to the explanation of the research techniques to be used underwater and to careful planning of the following dive.

All the participants will be divided into diving teams for the duration of the Course.

Requirements for SCUBA divers

Each participants will have to show:

- medical fitness certificate qualifying for SCUBA diving, issued by a recognised medical officer;
- personal insurance for SCUBA accidents;
- diving certificate.

Each participant will need to bring their own basic equipment including:

mask, fins, regulators, pressure and depth meter, diving computer, B.C., watch, etc. SCUBA tank and weight belts only will be supplied by the Organisers.

SCUBA diving insurance

Every effort will be made by the organisers to provide safe conditions during the diving activities. All participants on the Course will be covered by DAN Europe insurance for diving accidents (participants will receive a description of its coverage). Moreover, each participant has to be covered by his personal insurance for SCUBA accidents at least for the duration of the course.

Recompression chamber

Two recompression chambers are available at the Central Hospital of Portoferraio (40 min by car, 50 min by boat from Cavo). They are on permanent standby (24 hours per day) with a highly qualified medical staff. One is a portable one man chamber and the other is a four man recompression chamber.

Getting to Cavo (Isola d'Elba, Italy)

It is possible to reach Elba Island by boat (1h) from the harbour of Piombino. Three companies run ferries: Toremar, Navarma and Elba Ferris (see enclosed brochures). Toremar also runs a hydroplane directly connecting Piombino with Cavo (20 min). Piombino is located on the Roma - Genova railway line (Roma - Piombino: 3h; Genova - Piombino: 3½h). The closest airports to Piombino are Pisa and Florence, which are served by both national (to Milano, Roma, etc.) and international (to London, Paris, Frankfurt, etc.) airlines. A through train connects Florence (2½ h) and Pisa with Piombino (1½ h).

Accommodation

Accommodation will be reserved for all participants at the Hotel Cristallo (Cavo, Isola d'Elba). Class activities will take place in the conference room at the Hotel. Diving activities will be undertaken in the surrounding sea area, boats will leave from the quay in front of the Hotel.

Cavo is located on the North East tip of Elba Island. In may the average temperature on Elba Island is of about 15 °C during the night and 24°C during the day. Water temperature could range between 17 and 19 °C, water is usually clear (25 m visibility).

Diving Centre

Diving activities will be supported by the Cavo Diving Centre directed by Roland Heidinger (Germany). Four qualified instructors are permanently in attendance, they will be in charge of the logistical and technical support. Weight belts and SCUBA tanks (15 lt., 200 Atm, twin ports) will be supplied to all the participants. Three boats: Montecristo (25 divers), Mayfeld (10 divers) and Ras (8 divers) will support the diving activities. Weights and refilled tanks will be permanently available on the boats. At the Diving Centre it will be possible to rent diving equipment (regulators, wet suit, buoyancy jackets, etc.).

Diving rules

Each diving team will have a scientific leader responsible for underwater scientific activities and a dive leader in charge with regard to diving rules. Divedepth and duration (decompression) will be followed by computer or by reference using US Navy Decompression Tables. The diving instructor in charge of the technical aspects of the dive will act as reference for any technical problem occurring on the boat and during the dive, he will indicate the end of the dive and when the diving team is allowed to surface.

Dive sites

Diving will be undertaken in the area surrounding Cavo (see the enclosed nautical chart). This area offers the opportunity to dive at depths ranging between 5 and 50m, in the clear water of the Island. The morphology of the coast makes it easy to find a sheltered site from the winds coming from the I, III and IV quadrants. A detailed map (1:5000) of the sea floor along the cast of Cavo is available. It simplifies the choice of the diving sites in relation to the scientific activity planned for the dive. Not far from the Hotel, a swimming pool is available (max. depth 3m) to practice with special diving equipment (dry suit, full face mask, electronic communication tools etc.)

Organising Committee

M Abbiati	(IT)	Co-ordination, Scientific programme
M. Weydert	(BE)	Supervisor from the European Commission, DGXII
D. Ellerby	(UK)	President of the European Underwater Federation
C. Smith	(GR)	Institute of Marine Biology of Crete
P. Ryan	(IE)	Supervisor for the Course activities
M. Martin-Bueno	(SP)	President of the Scientific Committee of the CMAS

Scientific Committee

M Abbiati	(IT)	University of Pisa
P. Ryan	(IE)	University of Galway
N. Flemming	(UK)	University of Southampton
M. Weydert	(BE)	European Commission, DGXII
G. Kendrick	(AUS)	University of Western Australia
M. Martin-Bueno	(SP)	University of Zaragoza
J.N. Heine	(USA)	California State University
A.J. Southward	(UK)	Marine Biological Association of the UK
C. Smith	(GR)	Institute of Marine Biology of Crete
F. Cinelli	(IT)	University of Pisa
M. Alvisi	(IT)	OTA Srl
J.G. Harmelin	(FR)	University of Marseille
C.N. Bianchi	(IT)	ENEA CREA
P. Colantoni	(IT)	University of Urbino
F. De Strobel	(IT)	SACLANT Undersea Research Centre
P. Lonsdale	(UK)	University Marine Biological Station Millport

PROGRAMME

Thursday 1 May 1997

		Arrival of the participants and certification check (medical, diving, insurance, etc.)
		Diving equipment check, rental from the diving centre of any missing equipment (second regulator, etc.)
15.00		Welcome by F. Cinelli Director of ISSD Welcome by M. Weydert DG XII representative Welcome by D. Ellerby President of the EUF Welcome by M. Martin-Bueno President of the CMAS Scientific Committee
16.00	M. Abbiati	Presentation of the Course and of the detailed programme.
17.00	M. Weydert	Mobility of the scientific divers in the EEA: EU standard of qualification
18.00		Entrance exam for AESD diploma
19.30		Dinner
21.00		Organisation of the diving teams, registration to the dives, planning of diving and class activities

Friday 2 May

8.30	Meeting at the quay, organisation on the boats
10.00	Acclimatisation dive (<20m)
13.00	Lunch
14.30	F. De Strobel The use of SCUBA diving in oceanographic research
15.30	P. Ryan Geological sampling techniques using SCUBA
16.30	Coffee break
17.00	Entrance exam for AESD diploma
18.30	P. Colantoni Coastal geomorphology and sediment characterisation
19.30	Dinner
19.30	Night dive Orientation

Saturday 3 May

8.30	Teaching by the participants on the Course
10.00	Shallow water dive (<20m) Underwater operation of oceanographic equipment Geological underwater survey
13.00	Lunch
14.00	Teaching by the participants on the Course
15.00	Shallow water dive (<20m) Characterisation of sediments Orientation and topographic survey
18.30	D. Ellerby Diver training - theory and practice
19.30	Dinner
21.00	P. Lonsdale Safety rules in Scientific Diving

Sunday 4 May

8.30	Teaching by the participants on the Course
10.00	Intermediate depth dive (<30m) Topographic and geological survey
13.00	Lunch
14.30	M. Abbiati Biological sampling techniques
15.30	G. Kendrick Design of subtidal surveys and experiments on temperate reefs using SCUBA
16.30	Coffee break
17.00	Open discussion
19.30	Dinner
19.30	Night dive Geological and biological survey

Monday 5 May

8.30	Teaching by the participants on the Course	
10.00	Intermediate depth dive (<30m)	Estimation of the percentage coverage of benthic organisms
13.00	Lunch	
14.30	J.G. Harmelin	Visual census of fish populations
15.30	F. Cinelli	Image analysis in benthic ecology
16.30	Coffee break	
17.00	J. N. Heine	Subtidal sampling techniques in kelp forests
18.30	Open discussion	
19.30	Dinner	

Tuesday 6 May

8.30	Teaching by the participants on the Course	
10.00	Deep water dive (<40m)	Psychological tests
13.00	Lunch	
14.30	C. Smith	Diving with ROV's
15.30	G. Kendrick	The Australian experience in scientific diving
17.00	Teaching by the participants on the Course	
19.30	Dinner	
19.30	Night dive	Characterisation of the biota Orientation and topographic survey

Wednesday 7 May

8.30	Teaching by the participants on the Course	
10.00	Intermediate depth dive (<30m)	Survey of a <i>Posidonia</i> meadow Visual census of fishes
13.00	Lunch	
14.00	Teaching by the participants on the Course	
15.00	Shallow water dive (<20m)	Search methods in oceanography
18.30	J.N. Heine	The American Academy of Underwater Sciences (standards, training etc.)
19.30	Dinner	
21.30	Open discussion	

Thursday 8 May

8.30	Teaching by the participants on the Course
10.00	Deep water dive (<40m) Description of benthic assemblages
13.00	Lunch
14.00	Teaching by the participants on the Course
15.00	Shallow water dive (<20m) Team leading, basic rules and organisation
18.00	J.N. Heine Ice diving
19.00	P. Lonsdale Diving first aid including CPR and oxygen administration to dive casualties
20.00	Dinner

Friday 9 May

8.30	Teaching by the participants on the Course
10.00	Deep water dive (<40m) Safety roles in deep dives
13.00	Lunch
14.00	Teaching by the participants in the Course
15.00	Shallow water dive (<20m) Integrated survey operation of scientific teams
18.00	M. Martin-Bueno Archaeological survey
19.00	A.J. Southward Development of underwater photography
20.00	Dinner
21.30	Open discussion

Saturday 10 May

9.00	Deep water dive (<50m) Conclusive dive
13.00	Lunch
14.00	M. Weydert The implementation of the EU standards
16.00	Conclusive considerations M. Abbiati A summary of the Course activities M. Martin-Bueno The activity of the CMAS Scientific Committee P. Ryan Which future for the European Standards
20.00	Course Banquet

Sunday 11 May

Departure of the participants on the Course

Teaching staff

M. Abbiati	Animal Ecology	University of Pisa	IT
F. Cinelli	Video sampling	University of Pisa	IT
D. Ellerby	Diving techniques	B.S-A.C/E.U.F.	UK
J.G. Harmelin	Fish Biology	Stat. Marine d'Endoume, University of Marseille	FR
J.N. Heine	Kelp Forest Experimentation	Moss Landing Mar. Lab. California State University	USA
G. Kendrick	Hard bottoms Experimentation	University of Western Australia, Nedlands	AUS
P. Lonsdale	Medicine	University Marine Biological Station Milport	UK
M. Martin-Bueno	Archaeology	University of Zaragoza	SP
P. Ryan	Geology	University of Galway	IE
C. Smith	ROV Technology	Institute of Marine Biology of Crete	GR
M. Weydert	European Legislation	European Commission, DGXII, Brussels	BE
P. Colantoni	Sedimentology	University of Urbino	IT
F. De Strobel	Oceanographic engineering	SACLANT Research CentreNATO, La Spezia	IT
A.J. Southward	Marine Ecology Association UK	Marine Biological UK	