

U1379 SCUBA DIVING

PROGRAMME

Professional diving typologies; characterization and equipment of the recreational, commercial and scientific diving. The scientific diving certification and regulation.

The scientific hypothesis and the hypothetical-deductive approach in the sampling design: the null hypothesis; Sampling vs. census; sampling representativeness; numerical descriptors and factors; experimental designs; sampling error and statistical error

Underwater sampling strategies and sampling methods on different habitats and organisms; sampling equipment and sample collection and conservation; Disruptive sampling methods: definition and aims. Scraping, air-lift, panels, corers, casts, handtowed net and traps Non-disruptive methods: definition and aims. Visual census: quadrats, transects, manta-tow and photo-video

orientation to Open Water (OW) diving certification and Advanced Open Water (AOW) diving certification

Scuba diving equipment and its right use: the wet suit, the mask, fins and boots, the first and second stage regulator, the buoyancy compensator, the gloves, the weights and the weight belt, the gauges, the compass and the computer

Diving activity in confined water; how to manage their own equipment underwater

Preliminary activity to dive: the preparation of the equipment before diving. The buddy system during the dive: communication and assistance

The human body and the underwater environment; effects of the increasing pressure; breathing underwater; lung function; effects on the breathing of the compressed air: the gas partial pressures

Narcosis: causes and effects; adaptation to underwater environment; effects of the decreasing pressure during the ascent; Decompression sickness and the arterial gas embolism: causes and effects The ascending procedure

The dive planning; How to read and use the table of no-decompression limits; How to read and use the table for surface time and exercises

Residual nitrogen time: definition and how to read and use the table Repetitive dives and diving profile. Other factors influencing the nitrogen absorption