



Education & Lifelong Learning Center University of Thessaly

Blended Learning Training Programme In Hyperbaric Oxygen Therapy and Diving Accidents

3 months - 310 hours

Study Guide

This course has been accredited for Nurses and Operators by the European College of Baromedicine (ECB), European Committee for Hyperbaric Medicine (ECHM) and European Baromedical Association for nurses, operators and technicians. Also it has been accredited for Physicians by the European College of Baromedicine (ECB), European Committee for Hyperbaric Medicine (ECHM) and European Diving Technology Committee (EDTC) in level 2 H (Hyperbaric Medicine Physician) and D (Diving Medicine Physician) according to the 2011 ECHM-EDTC standards as per COST B14 Action.





THE EUROPEAN COLLEGE OF BAROMEDICINE





Introduction

The purpose of the training program is to educate participants in Diving Medicine and Hyperbaric Oxygen Therapy. The program aims to educate and train participants by enabling them to provide information services (Diving and Hyperbaric Health Education), support of a diving accident and Hyperbaric Oxygen treatment.

The ultimate goal of the program is to provide knowledge on issues related to the organization, operation and management of Diving and Hyperbaric Medicine Units. Moreover another goal of this blended training course is to prepare participants to apply Hyperbaric Oxygen Therapy safely as well as treating diving accidents appropriately inside health services.

Purpose - Expectations

Training in Diving and Hyperbaric Oxygen Therapy is related to the specialized field of Hyperbaric Medicine and Hyperbaric Nursing Science. The aim of this course is to clarify and provide knowledge on the physical parameters and laws of the gases that govern a dive. The role of the health professional and the professionals in the field of diving is considered important, because it promotes knowledge of those who want to engage in diving, following the international guidelines for the prevention and safe conduct of diving. According to the international literature the constituent characteristics of dealing with Diving Medicine and the clinical application of Hyperbaric Oxygen Therapy consist of the following:

A. In the timely identification of the disorders that accompany a diving accident, in the correct provision of first aid and in the fast and safe transportation of the diver, in order to treat the diving accident following the algorithm of medical and nursing protocols and actions.

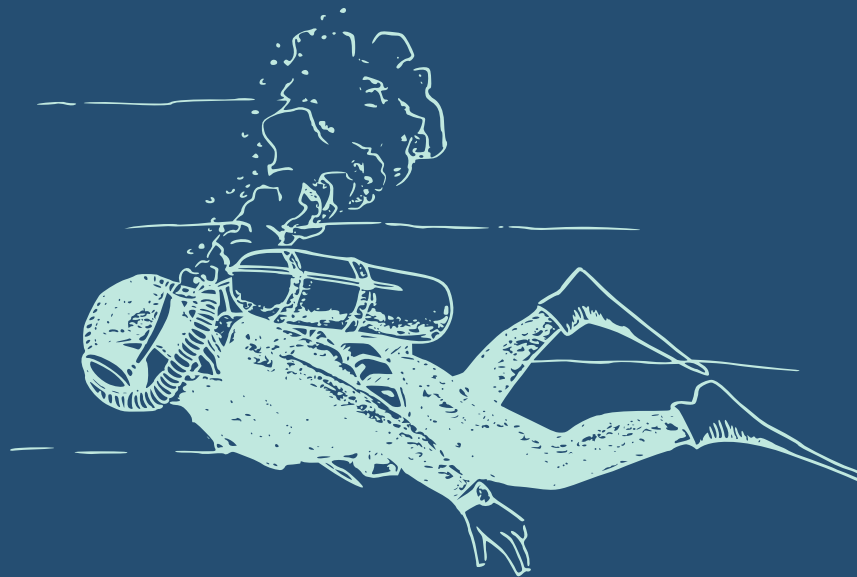
B. In the diagnosis, support and treatment of diving accident at tertiary level of healthcare and in the Hyperbaric Chamber

C. In health promotion of the population engaged in diving This will be an outcome of the gained knowledge on: determining factors that contribute to the prevention of diving accidents, on health examinations required in order to be involved in diving, in the periodic health examination in order to avoid the long-term effects of diving. In the prevention of diving accidents, in order to reduce the risk of occurrence of disease entities arising from the pressure difference. Secondly to achieve the reduction of disability that have occurred after a diving accident. Tertiary prevention concerns the field of rehabilitation and psychosocial reintegration of patients after a diving accident.

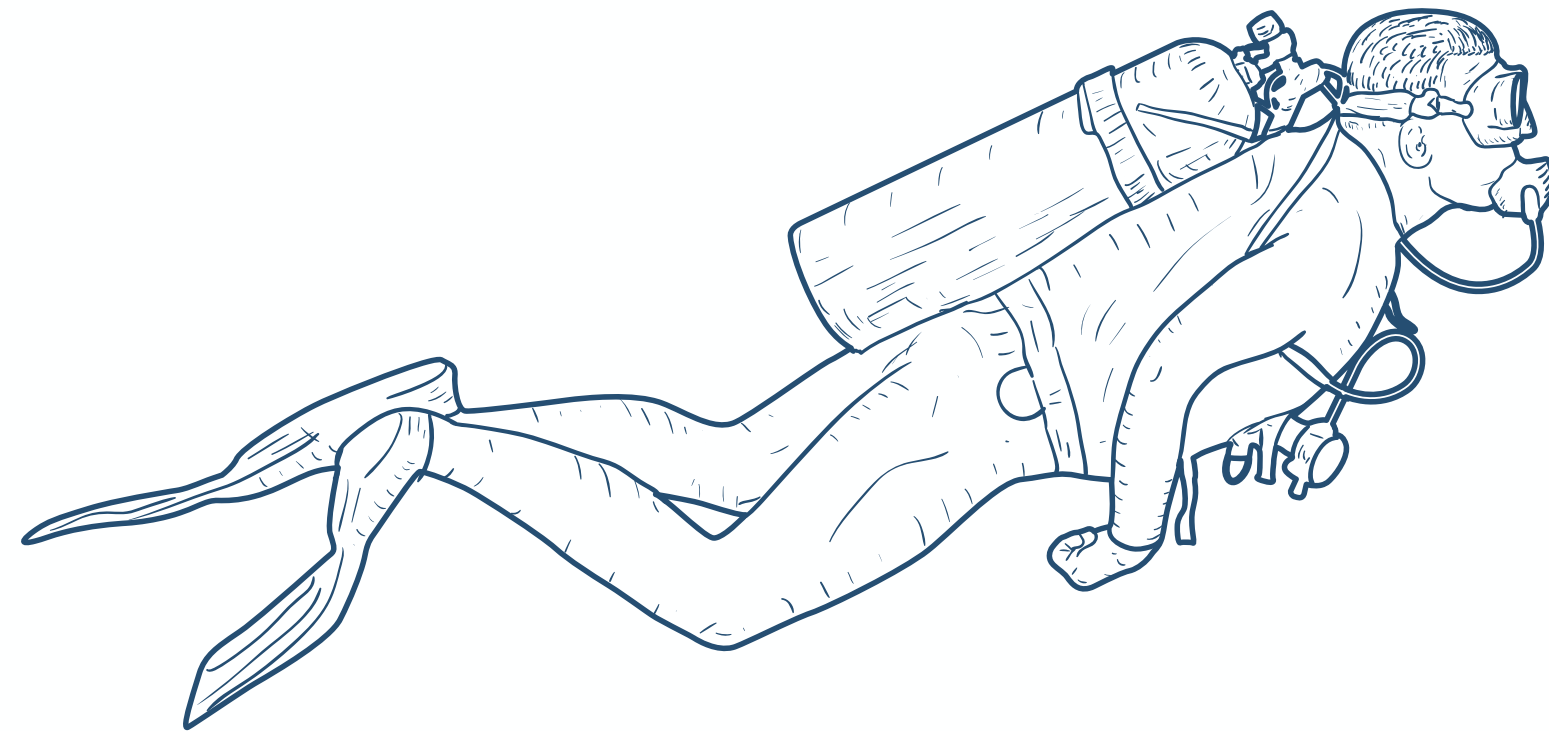


Purpose - Expectations

- D. Apply Hyperbaric Oxygen Therapy based on clinical indications recommended by the Undersea Hyperbaric Medical Society (UHMS) and the European Underwater and Baromedical Society (EUBS)
- E. To know the treatment protocols that must be applied to patients who need hyperbaric oxygen therapy and those diving diseases that need decompression therapy.
- F. To know the organization and operation of the Diving and Hyperbaric Medicine Units.
- G. To handle and use the European Code of Proper Operation for Diving and Hyperbaric Medicine Units. The objective of the European Code lies in the basic approach that it is a common point of reference for European countries with basic Guidelines, Rules and Standards for Hyperbaric Medicine, noting that Hyperbaric Education is considered a process that affects patients, medical staff and any other third parties. persons are involved in the therapeutic process and not in medical protocols, unless these protocols modify the safety levels of operation of the compression chambers.
- H. To know the transdermal oximetry (TcPO₂) which is considered important for the evaluation and management of chronic wounds, dull diabetic ulcers and other diseases that require treatment with hyperbaric oxygen.
- I. To be trained in the operation of Hyperbaric Chamber at a primary level, so that they can provide the most modern nursing practices, in the difficult space of an ever-changing atmosphere of atmospheric pressures, ensuring the best possible result of patient care and self-protection.



Training Goals





Knowledge

The trainee will be able to:

- define the concepts related to "Diving-Hyperbaric Medicine", "Diving Physics", "Hyperbaric Chamber", "Diving Accident", "Diver Disease", "Barotrauma", "Hyperbaric Oxygen Therapy", "Hyperbaric Safety", "Specialization in Hyperbaric Medicine", "Specialization in Hyperbaric Nursing".
- analyze the historical implications of Diving-Hyperbaric Medicine and Nursing Science.
- distinguish the types of Decompression Chambers.
- recognize the existence of Decompression Chambers internationally.
- describe the physiological effects of breathing gases on the Hyperbaric environment.
- set the atmospheric pressure.
- know the composition of atmospheric air.
- know the difference between atmospheric pressure and relative pressure.
- Define the laws of gases: Boyle-Mariotte's law, Charles's law, Dalton's law, Henry's law.
- distinguish diving accidents.
- identify and describes the barotrauma and its categorization.
- describe the normal processes involved in creating a barotrauma during diving and emerging.
- describe the causes, symptoms and prevention of the types of barotrauma: Acoustic, Vaginal, Pulmonary, Dental, Gastrointestinal.
- describe the decompression sickness.
- know the basic principles of dealing with a diving accident.
- describe the ways and alternative methods of transporting diving accidents.
- refer to the general context of prevention and treatment of diving accidents (decompression sickness, barotrauma).
- understand the definition of Hyperbaric Oxygen Therapy.
- know the signs of Hyperbaric Oxygen Therapy.
- understand the physiology and action of Hyperbaric Oxygen.
- know the management of transdermal tissue oxygen measurement.
- know the meaning of specialization in Diving and Hyperbaric Medicine.
- know the roles and specializations of the Hyperbaric Nurse.
- know the role of the Health Professional and the Diver whose involvement is related to Diving activities.
- understand the duties and particularities of the nurse working in a non-normative environment.
- describe the factors that affect the safety in the areas of hyperbaric oxygen therapy.
- assess the risk and signs of oxygen toxicity during Hyperbaric Oxygen Therapy.
- know and takes alternative safety measures when a treatment regimen is performed in the Decompression Chamber.



Skills

The trainee will be able to:

- to advise and provide instructions for the health examination of those who wish to be involved in diving.
- implement actions to prevent and deal with diving accidents
- provide advice to divers and diving centers
- to inform those who are involved in diving as an amateur
- receive the diver's history and diving profile, so that the results can be evaluated by the treating Diving Doctor.
- distinguish and guide diving emergencies and acute incidents in specialized Health structures.
- to face a diving accident at a primary Health level.
- to cooperate with the specialized Doctors and Nurses during the treatment protocol.
- to operate a Hyperbaric Chamber in cases of clinical application of Hyperbaric Oxygen Therapy.
- to recognize the importance of Oxygen toxicity in the treatment of patients in the Hyperbaric Chamber and to know the basic actions for its treatment.
- be able to deal with emergencies during the operation of the Hyperbaric Chamber.
- to apply basic operating procedures of the Diving and Hyperbaric Medicine Units.
- apply the Safety Rules Hyperbaric Chambers.
- to carry out a systematic examination of the patient or a diver before treatment in the Hyperbaric Chamber.
- monitor the implementation of decompression therapy tables.
- to develop communication techniques for better cooperation with patients and their family environment.
- apply infection prevention management techniques in the specialized area of the Pressure Chambers.
- to participate in programs related to the improvement and ensuring safe diving.

Attitudes

The trainee will be able to:

- collaborate with specialized Health Professionals in the field of Diving and the application of Hyperbaric Oxygen.
- receive basic training of a Common Module for Chamber Operators and hyperbaric nurses - in accordance with the standards of the European Baromedical Association for Nurses Technicians and Operators and the European Committee for Hyperbaric, as provided by the EBAss / ECHM Resources manual.
- receive training in accordance to the European Committee for Hyperbaric Medicine criteria, as a Level 2 H (Hyperbaric Medicine Physician) and D (Diving Medicine Physician) in Diving and Hyperbaric Medicine.
- participate in conferences and forums in the field of Diving and Hyperbaric Science, in order to be informed about the new data in therapies and new technologies in the field of Diving.



This educational program is addressed to:

- Health Professionals (physicians, nurses, physiotherapists and technicians etc)
- Professional and amateur divers

The application form is submitted electronically, through the website of the Education & Lifelong Learning Center of the University of Thessaly

Apply here



Eligibility Criteria

The candidate must meet the following conditions:

- Medically fit for working under hyperbaric conditions
- Current Basic Life Support certificate (BLS) or higher (max. 1-year old).
- Registered Nurse (for Hyperbaric Nurse module only)

Prerequisite knowledge-qualifications-supplies
(eg internet access, computer knowledge)

- Internet access
- Good knowledge of English
- Good knowledge of Computer use



Certificate

The successful completion of the educational program leads to the receipt of a Certificate of Specialized Training from the Education & Lifelong Learning Center of the University of Thessaly.

Accreditation

Nurses and Operators with the certificate from University of Thessaly have the opportunity to participate in the online examinations of the European Baromedical Association to progress to ECHRN or ECHCO as applicable.

Individual certificates of EUROPEAN COLLEGE OF BAROMEDICINE will be granted to all physicians who successfully complete the course «Blended Learning Training Programme In Hyperbaric Oxygen Therapy and Diving Accidents» and apply for such certification through University of Thessaly. The fee for each such certification is 20 Euro.

Practical Training

Nurses and Operators: are required to submit a log book in order to verify 48-hour of practical training from a certified Hyperbaric Center (according to the EBAss / ECHM / ECB scheme) of their choice, signed by the director of this Hyperbaric Center up to 3 months after the completion of the theoretical training.

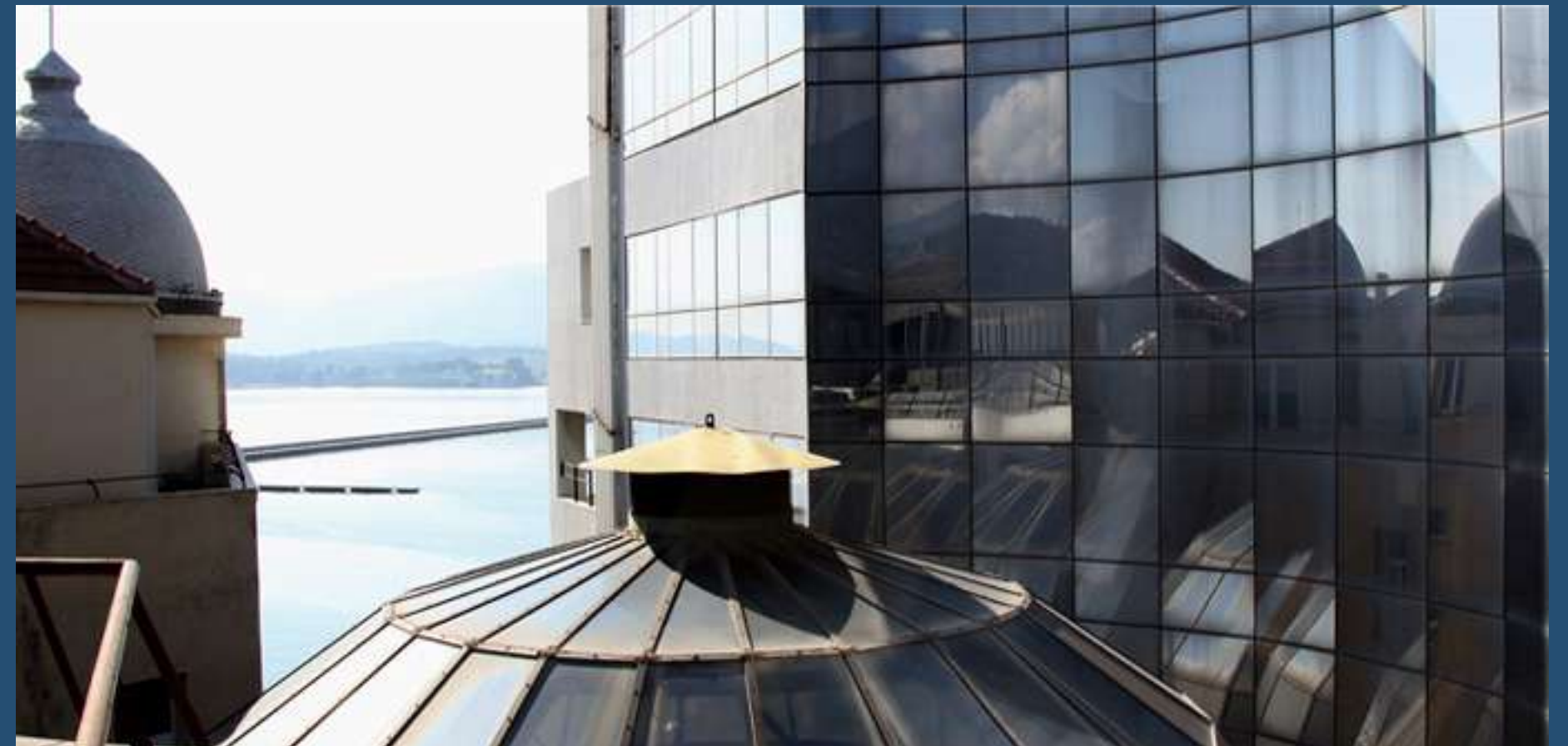
Physicians are required to submit a logbook verifying their practical training from a certified training Center according to 2011 ECHM-EDTC standards as per COST B14 Action of their choice, signed by the director of the Training Centers up to 6 months after the completion of the theoretical training.

About us



The Education & Lifelong Learning Center of the University of Thessaly has ISO 9001: 2015 certification and is evaluated by the "Quality Assurance Unit" of the University of Thessaly, according to the provisions of paragraph 12 of article 48 of Law 4485/2017, as this applies.

The external evaluation and certification of the quality of the educational / training programs of the Education & Lifelong Learning Center of the University of Thessaly is carried out by the "National Higher Education Authority", according to the provisions of sub-case bb, case b, case d, of paragraph 1 of article 2 of Law 4653/2020.



ECVET PER TEACHING UNIT

TEACHING UNIT	Training modules per teaching unit	ECVET
TEACHING UNIT 1	DIVING HISTORY INTERNATIONAL REGULATIONS EUROPEAN REGULATIONS CHARACTERISTICS OF VARIOUS DIVERS BASIC SAFETY PLANNING DIVING PROCEDURES DIVING EQUIPMENT COMPRESSED AIR WORK DIVING TABLES AND COMPUTERS REGULATIONS AND STANDARDS FOR DIVING SATURATION DIVING HYPERBARIC PHYSICS DECOMPRESSION THEORY DIVING RELATED PHYSIOLOGY ACUTE AND CHRONIC DYSBARIC DISORDERS	2
TEACHING UNIT 2	HBO-BASICS -PHYSIOLOGY AND PATHOLOGY HYPERBARIC PATHOPHYSIOLOGY OF IMMERSION BAROTRAUMA OXYGEN TOXICITY PRESSURE AND INERT GAS EFFECTS	4



<p>TEACHING UNIT 3</p>	<p>DIVING INCIDENTS AND ACCIDENTS DECOMPRESSION ILLNESS (DCI) EMERGENCY MEDICAL SUPPORT (WITH NO CHAMBER ON SITE) IMMEDIATE MANAGEMENT OF DECOMPRESSION ILLNESSES: RECOMPRESSION TABLES AND STRATEGIES REHABILITATION OF DISABLED DIVERS DIVING ACCIDENT INVESTIGATION</p>	<p>4</p>
<p>TEACHING UNIT 4</p>	<p>ASSESSMENT FOR DIVING FITNESS FOR RECREATIONAL DIVERS AND HYPERBARIC PERSONNEL MEDICATION UNDER PRESSURE DAMAGE CAUSED BY EXTERNAL FACTORS NON-DYSBARIC DIVING PATHOLOGIES FIRST AID</p>	<p>4</p>
<p>TEACHING UNIT 5</p>	<p>HYPERBARIC OXYGEN THERAPY GENERAL BASIC TREATMENT (NURSING) DATA COLLECTION / STATISTICS / EVALUATION RESEARCH STANDARDS</p>	<p>3</p>
<p>TEACHING UNIT 6</p>	<p>CHAMBER TECHNIQUE MANAGEMENT AND SAFETY IN HYPERBARIC FACILITIES DIAGNOSTIC, MONITORING AND THERAPEUTICAL DEVICES IN CHAMBERS RISK ASSESSMENT, INCIDENTS MONITORING AND SAFETY PLAN IN HBO CHAMBERS SAFETY REGULATIONS PARAMEDICS TEACHING PROGRAM</p>	<p>3</p>





Accreditation

This course has been accredited for Nurses and Operators by the European College of Baromedicine (ECB), European Committee for Hyperbaric Medicine (ECHM), and European Baromedical Association for nurses, operators and technicians. Also it has been accredited for Physicians by the European College of Baromedicine (ECB), European Committee for Hyperbaric Medicine (ECHM), and European Diving Technology Committee (EDTC) in level 2 H (Hyperbaric Medicine Physician) and D (Diving Medicine Physician) according to the 2011 ECHM-EDTC standards as per COST B14 Action

Training techniques - Tools- Equipment

- MOODLE platform
- Microsoft Teams

Scientific Coordinators



Malliarou Maria

Associate Professor of Nursing, University of Thessaly

Fildissis George

Professor, National Kapodistrian University of Athens, Intensive Care Unit – Unit of Hyperbaric Medicine

TRAINERS

- Sakas Georgios, Assistant Professor Department of Physical Education and Sport Science, University of Thessaly
- Chandrinou Angeliki, PhD, MSc, CCRN, ECHRN, ECHCO, ECHSM, President of European Baromedical Association for nurses, operators and technicians (EBAss)
- Gaitanou Konstantina, PhD, MSc, M MPH, ECHRN, ECHCO, ECHSM, President of Education Committee in European Baromedical Association for nurses, operators and technicians (EBAss)
- Bissias Christos, MD, MSc Consultant in Orthopaedics & Trauma with a special interest in Hip & Knee surgery, and Sports Medicine
- Terzis F. Timoleon, MD, PhD Consultant Otorhinolaryngologist Director, ENT Department and Head, Athens Rhinology Center, Athens Medical Center, Greece. President, Hellenic Rhinologic Society- Facial Plastic Surgery
- Polyzois Marios, MD, Internal Medicine Physician Subspecialty in Hyperbaric and Diving Medicine
- Peter Atkey, Former operations director at DDRC
- Sidiras Giorgos, MD, General Practitioner, Subspecialty in Hyperbaric and Diving Medicine
- Tzavelas Damianos, RN, MSc, ECHRN, ECHCO, ECHSM Wound Consultant & Hyperbaric Nurse, Secretary of European Baromedical Association for nurses, operators and technicians (EBAss)
- Papoutsidakis Evangelos MD, Specialist in Sports Medicine, Hyperbaric and Diving Medicine

The programme is done in collaboration with Intensive Care Clinic - Hyperbaric Medicine Unit of National and Kapodistrian University of Athens and Laboratory of Education and Research of Trauma Care and patient safety of Nursing Department of University of Thessaly.



Tuition Fees

The amount of tuition is set at 1100 euros.
Tuition fees can be paid in two installments of 550 euros.

Once you complete your registration in the program and a few days before the start of the courses you will receive information from the Secretariat to proceed with the deposit of the amount of the first installment.

The second installment of tuition will be deposited during the second month of the program.

If you wish, you can deposit the total amount in the payment period of the 1st installment.

In case you wish to issue a service invoice, you must fill in the corresponding fields in your application.



Contact us

Education & Lifelong Learning Center
University of Thessaly

Tel. +30 24210-06366/90

E-mail: learning@uth.gr

WebSite: <https://learning.uth.gr/>

Giannitson & Lahana, Tsalapata Complex,
Volos, PC 38334