Hybrid Professional Master's Degree

Hyperbaric Medicine

tech technological university

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Hybrid Professional Master's Degree

Hyperbaric Medicine

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months.

Certificate: TECH Technological University

Teaching Hours: 1,620 hours.

Website: www.techtitute.com/us/physiotherapy/hybrid-professional-master-degree/hybrid-professional-master-degree-hyperbaric-medicine

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Introduction

Hyperbaric Medicine is increasingly in demand. The magnificent results that have been demonstrated through the application of oxygenation therapies in the treatment of rheumatic, musculoskeletal and pain pathologies, or for the acceleration of healing, have made it one of the most effective therapeutic alternatives recommended by clinical professionals. Based on this, and in order to serve as a guide to professionals in this sector, TECH and its team of experts have developed a multidisciplinary program with which they can, in a theoretical and practical way, get up to date on developments in this field. This is an academic experience that will allow the graduate to learn about HBOT therapies and their clinical advances, and then give them the opportunity to be part of a prestigious international clinic for 3 weeks.

TECH presents this program as a unique opportunity to work in a theoretical and practical way in an exhaustive update on Hyperbaric Medicine applied to the physiotherapeutic field"

The benefits that can be obtained from therapeutic treatment through Hyperbaric Medicine are diverse. Nowadays, there is a wide range of diseases and ailments in which it is possible to alleviate their effects through oxygenation at high pressures: enhance the body's ability to recover through increased blood oxygen, promote healing, reduce the physiological consequences caused by radiotherapeutic injuries, etc… This is due to the recovery of damaged tissues that occurs during treatment, which positively influences the reduction of inflammation processes and the formation of bone callus in ligament or tendon ruptures, muscle tears, etc.

That is why it is a therapeutic strategy increasingly in demand, so the number of centers that demand the presence of professionals who are familiar with it increases every year. For this reason, and because of TECH's commitment to clinical sciences, it has developed a complete multidisciplinary program through which the specialist in Physiotherapy will be able to catch up with the latest developments in this sector.

It is a Hybrid Professional Master's Degree distributed in 1,620 hours, 1,500 of theoretical training and 120 of practical stay in a prestigious clinical center.In this way, the graduate will be able to update their knowledge based on the most innovative and effective HBOT fundamentals, being able to implement in their practice the techniques and guidelines for diagnosis that have had the best results to date. In addition, having the opportunity to access a reference entity in the field of Hyperbaric Medicine will allow you to perfect your skills through active work with real patients and with the supervision of a team of experts in the area that will do everything possible to get the most out of this incredible academic experience.

This Hybrid Professional Master's Degree in Hyperbaric Medicine contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- Development of more than 100 clinical cases presented by professionals in the field of hyperbaric medicine and its multiple uses
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Analysis of the physiological and therapeutic effects of hyperbaric oxygenation treatment through multiple evaluations and scientific studies
- Assessment of HBOT in chronic ulcers, diabetic foot, vasculitis and other infectious pathologies
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Practical clinical guides on approaching different pathologies
- Special emphasis on test-based medicine and research methodologies
- All of this will be complemented by theoretical lessons, questions to the expert, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection
- Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers

> You will be able to include in your skills the mastery of the latest hyperoxia and hypoxia techniques for wound healing"

Would you like to delve deeper into the application of HBOT in pain and rheumatic pathologies? In this qualification, you will find all the information you need to master this area"

In this Hybrid Professional Master's Degree, with a vocational nature and hybrid learning modality, the program is aimed at updating professionals specialized in hyperbaric medicine who wish to have access to the latest developments in this field. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate the most modern theoretical knowledge in the use of hyperbaric oxygenation with the most current clinical practice.

Thanks to the multimedia content, developed with the latest educational technology, Medicine professionals will benefit from contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

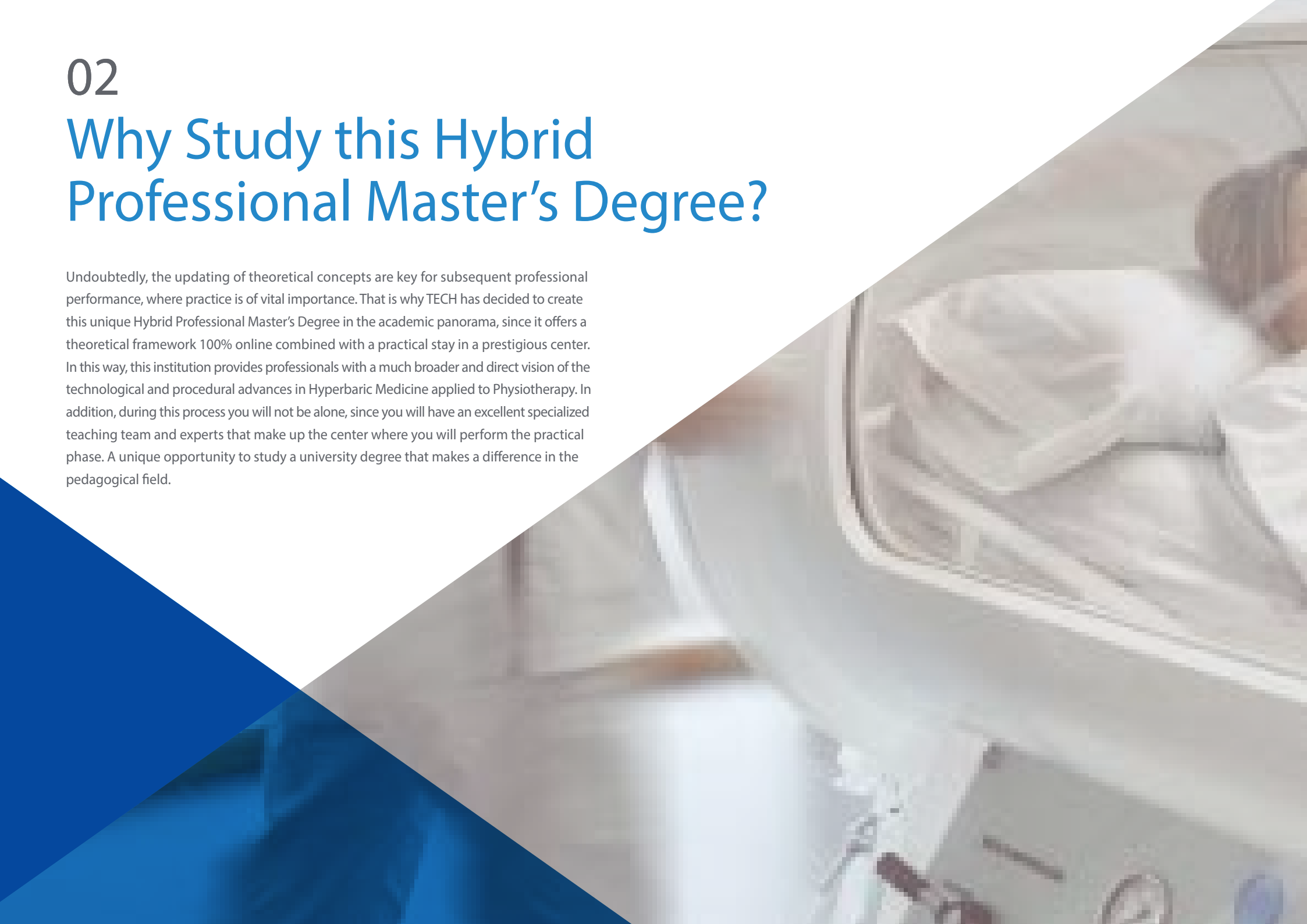
In the Virtual Campus you will find additional material of great quality and presented in different formats, so that you can delve in a personalized way in the different aspects of the syllabus.

You will be updated on the physical laws that govern Hyperbaric Medicine, as well as the most effective techniques to apply them.

02

Why Study this Hybrid Professional Master's Degree?

Undoubtedly, the updating of theoretical concepts are key for subsequent professional performance, where practice is of vital importance. That is why TECH has decided to create this unique Hybrid Professional Master's Degree in the academic panorama, since it offers a theoretical framework 100% online combined with a practical stay in a prestigious center. In this way, this institution provides professionals with a much broader and direct vision of the technological and procedural advances in Hyperbaric Medicine applied to Physiotherapy. In addition, during this process you will not be alone, since you will have an excellent specialized teaching team and experts that make up the center where you will perform the practical phase. A unique opportunity to study a university degree that makes a difference in the pedagogical field.



A HybridMaster where you will be able to update your knowledge in Hyperbaric Medicine with the best specialists in this field"

1 Updating from the Latest Technology Available

New technologies and scientific basis are the two pillars that have driven Hyperbaric Medicine and its multiple applications in various pathologies. Given this scenario of progress and the firm commitment of the most prominent clinical centers for this therapy, TECH has designed this program, which brings the specialist closer to the latest advances in this field. In this way, in an avant-garde environment and under the tutelage of the best specialists, the professional will be able to integrate the most significant technical and technological advances in this specialty in their practice.

2 Gaining In-depth Knowledge from the Experience of Top Specialists

TECH has designed this degree with the philosophy of offering the professional an update of their knowledge through the best specialists in Hyperbaric Medicine. That is why, firstly, you will have an excellent teaching staff, and secondly, during the practical stay you will be next to an expert team in this discipline. In both cases, this teaching experience will allow you to introduce the most effective methods and approaches in patients requiring hyperbaric oxygen therapy into your daily practice.

3 Entering First-Class Clinical Environments

The professional who enters this degree has the guarantee of being able to have a practical stay in a prestigious center. For its selection, TECH has followed a rigorous process, which will allow you to obtain a broadening of their skills and abilities, with the help of the best specialists in Hyperbaric Medicine oriented to its use in Physiotherapy. In this way you will be able to verify what the realization of a meticulous, scientific and precision work is like in a real clinical scenario in a sanitary space of excellence.

4 Combining the Best Theory with State-of-the-Art Practice

In the academic market, professionals can find programs that are far removed from their needs, from their daily work, and that also require long hours of study and memorization. In this sense, TECH moves away from this methodology and opts for a degree that perfectly combines advanced theory, taught in a flexible manner, with an intensive practical stay in a leading clinical center. All this will allow you to learn the latest procedures in the field of Hyperbaric Medicine through a Hybrid Professional Master's Degree, unique in the university scene.

5 Expanding the Boundaries of Knowledge

The specialist who takes this university degree will obtain the updated knowledge they are looking for, both from a technical, scientific and practical point of view. All this will lead them to be able to apply these concepts to their practice, or to carry them out in any health scenario at the highest level. In this way, the graduate obtains, through this program, a much broader vision of the applications of Hyperbaric Medicine in their profession.

> You will have full practical immersion at the center of your choice"

03

Objectives

The boom related to the application of Hyperbaric Medicine in the clinical setting has led more and more professionals to include this therapeutic strategy in their services. Based on this, TECH has designed this Hybrid Professional Master's Degree with the aim that graduates who access it can catch up on developments related to this field, through a comprehensive, multidisciplinary and dynamic academic experience that will mark a before and after in their careers.

If your objectives include mastering the intermittent hyperoxia model and its clinical applications, you are in the right place and this program is the best option to achieve it"

General Objective

- The objective of this Hybrid Professional Master's Degree in Hyperbaric Medicine is to disseminate the usefulness of oxygenation treatment in different clinical specialties, more specifically in the physiotherapeutic area. With this program, the specialist will be able to get up to date with the latest developments related to this therapeutic strategy: its indications, contraindications, usage models, times, etc. In addition, they will be able to perfect their skills in the definition, evaluation, and determination of the diagnostic and clinical approach in patients with chronic diseases of neuropathic, musculoskeletal, oncological and visceral origin.

> A program for you to achieve excellence, are you in?"

Specific Objectives

Module 1. Introduction to Hyperbaric Medicine

- Introduce the world history of Hyperbaric Medicine and the operation and differences in the types of hyperbaric chambers that exist today
- Describe the current state of new indications and applications based on the development of evidence, the evolution of the different models and types of hyperbaric chambers, and the origin of scientific societies related to the specialty
- Develop the concept of oxygen toxicity, contraindications and adverse effects related to the discoveries of its mechanism of action (e.g., The Bert Effect)
- Present the new concept of Hyperbaric Medicine which includes treatment with lower pressure, its indications, limitations and potential future applications

Module 2. Basis of Hyperbaric Oxygenation Treatment (HBOT)

- Training on the basis of Hyperbaric Oxygenation Treatment (HBOT) and mechanisms used to achieve hyperoxia
- Present the intervening physical laws and the Krogh mathematical model which substantiates the effect of the treatment at different pressures
- Describe the differences between the volumetric and solumetric effect of HBOT and its limitations in the treatment of different diseases
- Present the types of hypoxia described and the scenarios of hypoxia-related disorders in different pathologies

Module 3. Physiological Therapeutic Effects of HBOT

- Studying the effects of hyperoxia on a mitochondrial level and the physiological benefits it triggers
- Describe the importance of mitochondrial reactivation with HBOT and its potential effect on different related pathologies with mitochondrial dysfunction
- Present the physiological effects that are triggered with HBOT and the production of reactive oxygen species
- Relate these physiological effects to different indications of HBOT
- Learning the analysis of different clinical cases which can benefit from the therapeutic effects of HBOT

Module 4. HBOT in Wound Healing Process and Infectious Pathology

- Present the scientific evidence of HBOT on different types of complex wounds and burns
- Training in the role of HBOT in wound healing process
- Up-to-date information on the evidence of the physiological therapeutic effects of HBOT on wound healing and medium pressure
- Demonstrate the experience in these applications with a presentation of clinical cases

Module 5. HBOT in Pain, Rheumatic Diseases and the Medical Clinic

- Describe the effect and scientific evidence of HBOT on altitude sickness
- Demonstrate the mechanism of hyperbaric oxygen on analgesia and experimental evidence
- Training on the application of HBOT in rheumatic diseases and neurosensitive syndromes
- Discuss the possible application in the prevention of metabolic pathologies, with an inflammatory component or ischemia-reperfusion injury
- Present the experience of HBOT in clinical cases of chronic pain, intoxications and clinical medicine

Module 6. HBOT in Physical and Neurological Rehabilitation

- Present the scientific evidence on the neurological indications of HBOT
- Describe the effect of HBOT on physical rehabilitation
- Train in the indications of HBOT in sporting injuries and trauma pathologies
- Describe the effect of HBOT on recovery and performance in sport
- Discuss the role of hypoxia in the development of neurodegenerative diseases and present the evidence of HBOT on Parkinsons and Alzheimers
- Present the experience of clinical cases treated with HBOT

Module 7. HBOT in Oncology

- Describe the applications and experience in cases of clinical oncology
- Present the scientific evidence on the use of HBOT as a coadjuvant of oncological treatment
- Describe the effects of HBOT on the different radiotoxicities
- Train in the oncological safety of HBOT (angiogenesis and tumor growth)
- Present the experimental evidence of the safety and efficiency of HBOT in oncologic pathology

Module 8. HBOT in Toxicology

- Present the evidence and the application of HBOT in intoxication from gases
- Discuss the indication of HBOT in pressures lower than those described in the literature, considering the importance of speed in establishing HBOT in the case of carbon monoxide poisoning
- Present evidence of poisoning and injuries from venomous animal bites (Loxoscelism, snake bites)

Module 9. HBOT in Dysbaric Pathology

- Present the scientific evidence on decompression sickness in divers
- Introduce the concept of dysbaric pathologies and Underwater Medicine
- Discuss the need for the volumetric effect of HBOT and the use of high-pressure chambers
- Describe the evidence of the effect of HBOT in iatrogenic embolism
- Introduce the concepts of work safety with high pressure chambers
- Present the requirements and regulations for the installation of the different hyperbaric chambers

Module 10. Indications and Contraindications Integration Module

- Train in the valid indications of HBOT for the different societies of Hyperbaric Medicine and the emerging indications based on the physiological therapeutic effects of HBOT
- Describe the adverse events that are expected from HBOT with different treatment pressures
- Present the contraindications of HBOT
- Discuss different clinical cases based on the integration of validated applications and the potential future applications of HBOT

04

Skills

When a professional decides to undertake an academic experience, there is no doubt that they seek to improve their skills in the area in which they work. For this reason, with all its degreesTECH guarantees a comprehensive work with which the graduate can not only work on improving their skills and abilities, but can expand them based on the latest information in the sector. In this particular case, the physiotherapist will have the opportunity to implement the most effective and innovative hyperbaric diagnostic and treatment strategies in their practice.

A theoretical-practical program perfect to perfect your physiotherapeutic competences in patient management through the most innovative hyperbaric oxygenation treatments"

General Skills

- Identify and resolve cases of pathologies in which hyperbaric oxygenation treatments can reduce the risk of morbidity and mortality, or considerably improve the patient's quality of life
- Recognize the benefits of hyperbaric chamber treatment on pathologies of diverse origins.
- Actively participate in the use and expansion of the specialty in the field of public and private health

> You will combine theory and professional practice through a demanding and rewarding educational approach"

Specific Skills

- Recognize the different hyperbaric chambers which have existed throughout history
- Identify the origin of the scientific societies of this speciality
- Recognize the adverse effects of the treatments and know how to deal with them
- Know how to apply Hyperbaric oxygenation Treatment (HBOT)
- Identify the disorders associated with hypoxia and know how to deal with them
- Know in detail the physiological therapeutic effects caused by the generation of hyperoxia
- Develop the critical sense to understand the mechanisms of action in different proven and potential clinical applications
- Be able to identify the effects of HBOT that intervene in wound healing
- Know about the new treatment alternatives in the different types of wounds
- Know about the fundamentals of the driving mechanism of hyperbaric oxygen in pain
- Know how to apply hyperbaric oxygen in different pathologies which come with chronic pain and therefore improve the patient's quality of life
- Know about the basis of the contribution of hyperbaric oxygen in the improvement of neuroplasticity in different cases of neurological rehabilitation
- Be capable of using hyperbaric oxygen for injury recovery and for improving performance in sport, following the optimal conditions for establishing the treatment
- Know about the evidence, experience and future indications of the application of HBOT in clinical oncology
- Understand the role of HBOT in improving the oncology patient's quality of life and in managing radio induced lesions
- Know how to apply the driving mechanism of hyperbaric oxygen in the intoxication of gases
- Know about the treatment options currently available on the market and their applications and limitations in the rapid onset of acute intoxication
- Use hyperbaric oxygen for the recovery of neurological lesions post intoxication
- Know in depth about Underwater Medicine and the need for high pressure chamber treatment in dysbaric pathologies
- Understand work safety in hyperbaric chamber procedures
- Know about the legal requirements necessary for the operation of hyperbaric chambers
- Integrate the concepts related to Hyperbaric Medicine
- Know about the respective approved indications in detail
- Be capable of applying the concepts of the physiological effects of HBOT on different pathologies
- Perform indications in different clinical cases, assess the contraindications and make decisions in response to the different adverse effects that can occur during treatment

05

Course Management

TECH places special emphasis on the conformation of its teaching teams, since it considers it essential that the graduate can count on a good guide to solve their doubts and keep abreast of developments in the sector. Thanks to this criterion, it has been possible to develop a faculty versed in Hyperbaric Medicine with a wide and extensive experience in the clinical management of patients with different pathologies through oxygenation and the most innovative and effective HBOT.

The teaching team will be at your disposal to guide you through the educational experience and to answer any questions you may have during the course"

International Guest Director

Dr. Peter Lindholm is an eminence in Hyperbaric Medicine and the approach to Respiratory Disorders. His research has been focused on the Pathophysiology of Lung Diving, exploring topics such as Hypoxia and loss of consciousness.

Specifically, this expert has analyzed in depth the effects of the medical condition known as Lungsqueeze, frequent in divers. Among his most important contributions in this area is a detailed review of how glossopharyngeal breathing can extend lung capacity beyond normal limits. In addition, he described the first case series linking glossopharyngeal insufflation with cerebral gas embolism.

At the same time, he has been a pioneer in proposing the term Tracheal Squeeze as an alternative to pulmonary edema in divers who bleed after deep dives. On the other hand, the specialist has shown that exercise and fasting before diving increase the risk of loss of consciousness, similar to hyperventilation. In this way, he has developed an innovative method to use Magnetic Resonance Imaging in the diagnosis of Pulmonary Embolism. In the same way, he has delved into new techniques for measuring hyperbaric oxygen therapy.

Dr. Lindholm also serves as Director of the Endowed Gurneee Chair of Diving and Hyperbaric Medicine Research in the Department of Emergency Medicine at the University of California, San Diego, United States. Likewise, this renowned expert spent several years at Karolinska University Hospital. In that institution he worked as Director of Thoracic Radiology. He also has vast experience in diagnosis by means of clinical imaging based on radiation, and has even given lectures on the subject at the prestigious Karolinska Institute in Sweden. He is also a regular speaker at international conferences and has numerous scientific publications.

Dr. Lindholm, Peter

- Chair of Hyperpathic Medicine and Diving at the University of California, San Diego, United States
- Director of Thoracic Radiology at the Karolinska University Hospital
- Professor of Physiology and Pharmacology at Karolinska Institute in Sweden
- Reviewer for international scientific journals such as American Journal of Physiology and JAMA
- Medical Residency in Radiology at the Karolinska University Hospital
- Doctor of Science and Physiology, Karolinska Institute, Sweden

> Thanks to TECH, you will be able to learn with the best professionals in the world"

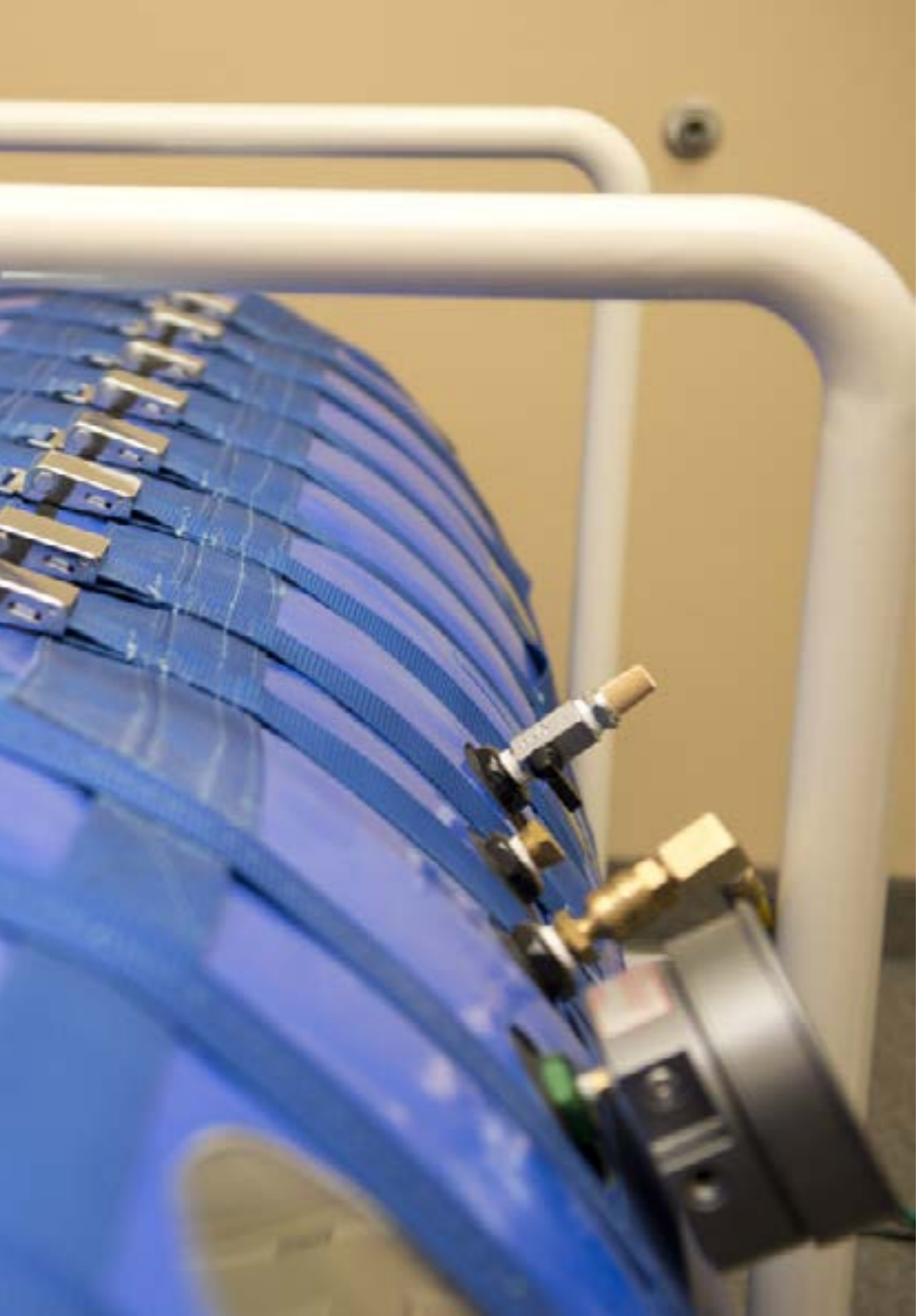
Management

Dr. Cannellotto, Mariana

- Specialist in Hyperbaric Medicine
- Medical Director from BioBarica - Hyperbaric Systems
- Clinical Physician at CES SRL
- President of Argentina Association of Hyperbaric Medicine and Research
- President of Ihmera

Ms. Jordá Vargas, Liliana

- Clinical Biochemistry and Microbiology Expert
- Scientific Director from BioBarica - Hyperbaric Systems
- Microbiologist at CRAI Norte
- Bacteriologist at Vélez Sarsfield Hospital
- Scientific Director of AAMHEI and AEMHEI
- Degree in Biochemistry from the National University of Córdoba
- Biochemistry and Clinical Microbiology, University Institute CEMIC



Professors

Dr. Verdini, Fabrizio

- Clinical Doctor at BioBarica Hyperbaric Systems
- Director of Health Programs at Camp La Llanada
- General Practitioner at Doctor Armando Mata Sanchez Hospital
- Doctor of Medicine from the University of Carabobo
- Master's Degree in Hyperbaric Medicine from the CEU Cardenal Herrera University.
- Master's Degree of Business Administration healthcare, Polytechnic University of Puerto Rico

Dr. Ramallo, Rubén Leonardo

- Attending Physician Specialist in Medical Clinic at the General Hospital of Acute Diseases
- Physician in Hyperbaric Medicine. Biobarica Hyperbaric Systems
- Medical Surgeon Faculty of Medical Sciences. National University of Córdoba
- Specialist in Internal Medicine. Residency in Internal Medicine, Córdoba Hospital
- Master's Degree in Psychoimmunoneuroendocrinology. Favaloro University
- Director of the AAMHEI Medical Clinic Commission

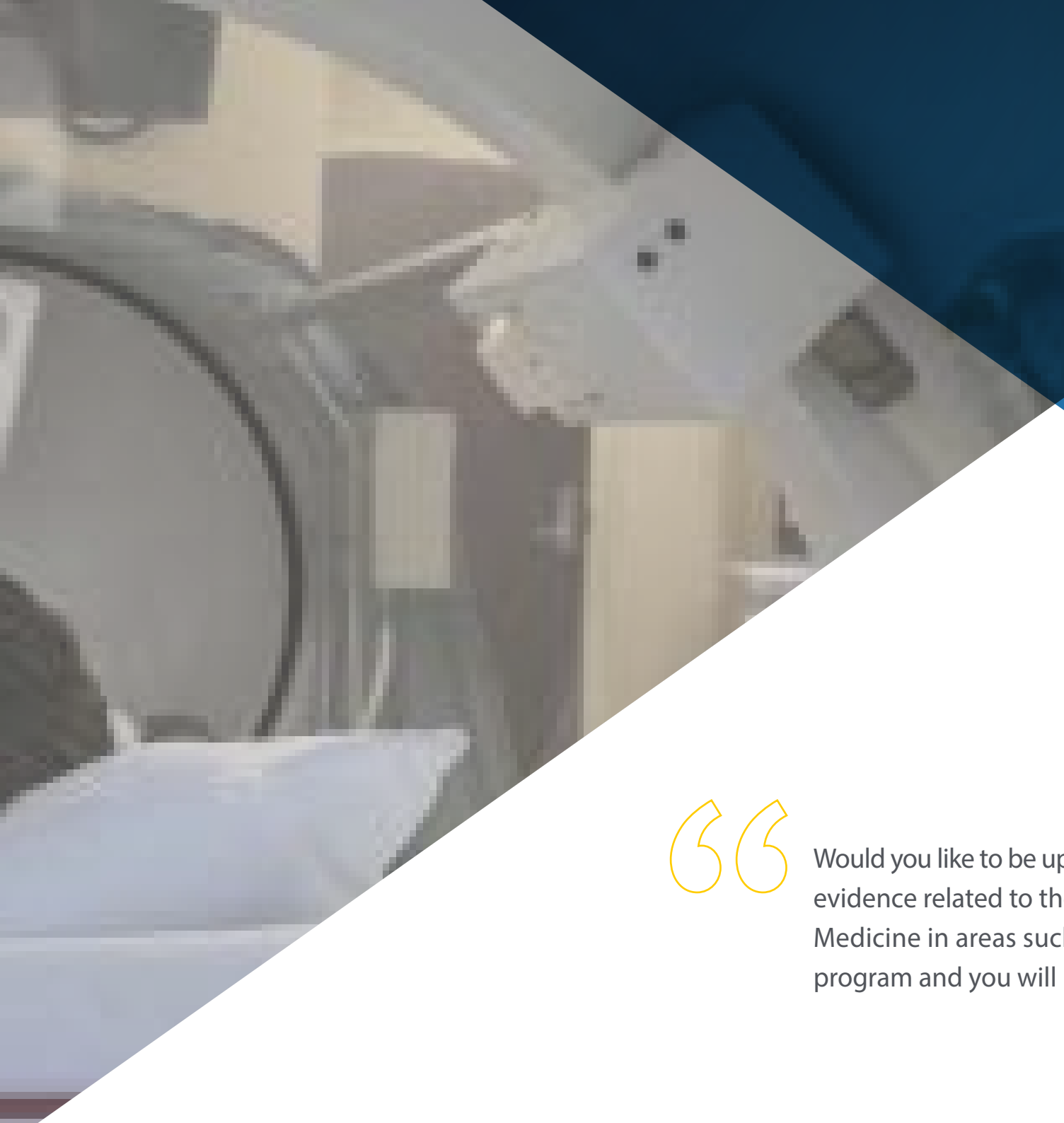
Dr. Emilia Fraga, Pilar María

- Director of the Scientific and Clinical Research Division at Biobarica
- Food evaluator at the National Food Institute
- Professor of Anatomy and Physiology at ADEF
- Degree in Biochemistry from Arturo Jauretche National University

06

Educational Plan

Developing this Hybrid Professional Master's Degree has been a real challenge for TECH and its team of experts, who, despite being versed in the area, have had to carry out an exhaustive research task to shape a complete program, up-to-date and adapted to the pedagogical criteria that define and differentiate this university. In addition, with an emphasis on the multidisciplinary factor that characterizes all the programs of this institution, they have also included hours of additional material in audiovisual format, research articles, dynamic summaries and complementary readings in its content so that the graduates can make the most of this educational experience and delve into the most relevant aspects of the syllabus for their professional performance.



Would you like to be updated on the latest scientific evidence related to the application of Hyperbaric Medicine in areas such as diving? Choose this program and you will be able to find out about it"

Module 1. Introduction to Hyperbaric Medicine

1.1. History of Hyperbaric Medicine
1.2. First Hyperbaric Chambers
1.3. Discovery of Oxygen
1.4. Scientific Period of Hyperbaric Medicine
1.5. Types of Hyperbaric Chambers Revitalair Technology Chambers
1.6. Technical and Therapeutic Safety of the New Generation Hyperbaric Chambers
1.7. Hyperbaric Medicine Societies in the World and the Evolution of the Indications
1.8. Introduction to the Basis of Hyperbaric Oxygenation
1.9. Introduction to the Adverse Effects and Contraindications
1.10. Current Concept of Hyperbaric Oxygenation Treatment Medium Pressure, Micro pressure and Hyperbaria

Module 2. Basis of Hyperbaric Oxygenation Treatment (HBOT)

2.1. Physiological Basis of Hyperbaric Oxygenation Treatment
2.2. Dalton, Henry, Boyle and Mariotte Physical Laws
2.3. Physical and Mathematical Bases of the Diffusion of Oxygen within Tissue in the Different Treatment Pressures. Krogh Model
2.4. Physiology of Oxygen
2.5. Physiology of Respiration
2.6. Volumetric and Solumetric Effect
2.7. Hypoxia: Types of Hypoxia
2.8. Hyperoxia and Treatment Pressure
2.9. Hyperoxia Effective in Wound Healing
2.10. Bases of the Intermittent Hyperoxia Model

Module 3. Physiological Therapeutic Effects of HBOT

3.1. Introduction to the Physiological Therapeutic Effects
3.2. Vasoconstriction
  3.2.1. Robin Hood Effect
  3.2.2. Effect of HBOT on Blood Pressure and Heart Rate
3.3. Stem Cells and Oxygen
  3.3.1. Liberation of Stem Cells with HBOT
  3.3.2. Importance of Stem Cells on Wound Healing
  3.3.3. Oxygen in the Differentiation of Stem Cells
3.4. Oxygen in the Synthesis of Collagen
  3.4.1. Synthesis and Types of Collagen
  3.4.2. Oxygen in the Synthesis and Maturing of Collagen
  3.4.3. HBOT and Collagen in Healing
3.5. Angiogenesis and Vasculogenesis
  3.5.1. Degenerative Angiogenesis and Hyperbaric Oxygen
3.6. Osteogenesis
  3.6.1. HBOT and Osteogenesis and Bone Resorption
3.7. Mitochondrial Function, Inflammation and Oxidative Stress
  3.7.1. Mitochondrial Dysfunction in the Pathogenesis of Different Pathologies
  3.7.2. HBOT and Mitochondrial Function
3.8. Oxidative Stress and Hyperbaric Oxygen
  3.8.1. Oxidative Stress in Different Pathologies
  3.8.2. Oxidative Stress in Hyperbaric Oxygen
3.9. Anti-inflammatory Effect in Hyperbaric Oxygen
  3.9.1. Hyperbaric Oxygen and Inflammation
3.10. Antimicrobial Effect in Hyperbaric Oxygen
  3.10.1. Bacterial Effect of Oxygen
  3.10.2. Hyperbaric Oxygen and Biofilm
  3.10.3. Hyperbaric Oxygen and the Immune Response
3.11. Oxygen and Neurone Function
  3.11.1. Oxygen and Peripheral Axonal Regeneration
  3.11.2. Oxygen and Neuroplasticity

Module 4. HBOT in Wound Healing Process and Infectious Pathology

4.1. HBOT in Healing Physiology
4.2. Medium Pressure and Wound Healing
  4.2.1. Effective Angiogenesis
  4.2.2. Equivalent Osteogenesis
  4.2.3. Anti-inflammatory Effect in Medium Pressure
4.3. Necrotizing Infections
4.4. HBOT in Chronic Ulcers and Diabetic Foot
4.5. Burns
4.6. Injuries from Radiofrequency Lesions and Hyperbaric Oxygen
4.7. HBOT in Crush Syndrome
4.8. Vasculitis and HBOT
4.9. HBOT in Pyoderma Gangrenosum
4.10. Evidence of HBOT in Other Injuries and Dermatological Conditions

Module 5. HBOT in Pain, Rheumatic Diseases and the Medical Clinic

5.1. HBOT in Altitude Sickness
5.2. Mechanisms of Action in Analgesia: Neuropathic Pain and Hyperbaric Oxygen
5.3. Arthropathies and Collagenopathies
5.4. HBOT in Dysfunctional Neurosensitive Syndromes
5.5. Fibromyalgia and Hyperbaric Oxygen
5.6. HBOT in Ischemia Reperfusion Injury
5.7. Tinnitus and Sudden Onset Deafness
5.8. Inflammatory Bowel Diseases and Hyperbaric Oxygen
5.9. HBOT in Fertility
5.10. Hyperbaric Oxygen in the Metabolism of Diabetes and Severe Anemia

Module 6. HBOT in Physical and Neurological Rehabilitation

6.1. HBOT in Recovery and Performance in Sport
6.2. Hyperbaric Oxygen and Sporting Injuries
6.3. Brain Trauma and Post-Concussion Syndrome
6.4. Stroke Recovery and Hyperbaric Oxygen
6.5. Brain Paralysis and HBOT
6.6. Autism
6.7. Ischemic Encephalopathies
6.8. HBOT in Parkinson's
6.9. HBOT in Alzheimer's
6.10. HBOT in Trauma (Avascular Necrosis, Bone Edema, Fractures and Osteomyelitis)

Module 7. HBOT in Oncology

7.1. Hypoxia and Tumors
7.2. Tumoral Angiogenesis
7.3. Oncologic Safety of HBOT
7.4. HBOT and Radiosensitivity
7.5. HBOT and Chemotherapy
7.6. Osteoradionecrosis and Hyperbaric Oxygen
7.7. Radical Cystitis and Proctitis
7.8. Radio induced Skin Syndrome and HBOT
7.9. HBOT in Other Radio lesions
7.10. HBOT in Oncology Pain and Quality of Life

Module 8. HBOT in Toxicology

8.1. Bibliographical Evidence in Relation to Dosage/ Speed of Using Hyperbaric Oxygen in Carbon Monoxide Poisoning
8.2. Inflammation in Carbon Monoxide Poisoning
8.3. Delayed Neurological Syndrome
8.4. Smoke Inhalation and Hyperbaric Oxygen
8.5. HBOT in Hydrogen Cyanide Poisoning
8.6. HBOT in Other Gases Poisoning
8.7. Hyperbaric Oxygen in Pollution and Tobacco
8.8. Hyperbaric Oxygen in Addiction Recovery
8.9. HBOT in Corner Spider Bite Injuries and Poisoning
8.10. HBOT in Snake Bite Injuries and Poisoning

Module 9. HBOT in Dysbaric Pathology

9.1. Diving and Diving Medicine
  9.1.1. Physiological Reactions to Diving Conditions
  9.1.2. Deep Neurological Syndrome
9.2. Changes in Environmental Pressure
  9.2.1. Decompression Sickness
  9.2.2. Air Embolism
  9.2.3. Pathophysiology
  9.2.4. Symptoms and Signs
9.3. Treatment of Decompression Sickness
  9.3.1. Prevention of Dysbaric Accidents
  9.3.2. Decompression Table
9.4. Dysbaric Pathology and Evidence-Based Medicine
9.5. Dysbaric Osteonecrosis
9.6. HBOT in Postoperative Gas Embolism Iatrogenic Embolism
9.7. Hyperbaric Medicine in the Workplace
  9.7.1. Working in Compressed Air
  9.7.2. Medical Documents and Immersion Records
  9.7.3. Health Risks

9.8. Occupational Accident among Operators of High-Pressure Chambers: Medical Support and Treatment for Compressed Air Jobs

9.9. Fire: Evaluation and Prevention with Hyperbaric Chamber with Combustion Risk

9.10. Regulations and Requirements for the Installation of Different Types of Hyperbaric Chambers

Module 10. Indications and Contraindications Integration Module

10.1. Absolute and Relative Contraindications of HBOT

10.2. Adverse Effects of Hyperoxia

10.3. Neuronal and Pulmonary Oxygen Toxicity

10.4. Neurotoxicity/Neuroexcitability

10.5. Objective and Subjective Barotrauma

10.6. Special Care for Patients who Receive HBOT at Different Pressures

10.7. Indications by Consensus of the European Committee of Hyperbaric Medicine

10.8. Emerging Medical Applications Off label and Medicare Indications

10.9. Management in Hyperbaric Medicine Centers: HBOT in Public and Private Health

10.10. Cost-Benefit Relationship of the Application of HBOT HBOT Cost Efficiency

"You will have access to 1,500 hours of diverse theoretical content, thanks to which you will be able to acquire up-to-date knowledge on techniques such as working with compressed air or by decompression"

07

Clinical Internship

The highlight of this Hybrid Professional Master's Degree comes, undoubtedly, once the theoretical period is over. Once this stage is completed, the graduate will have access to 3 weeks of practical training in a clinic of Hyperbaric Medicine of international prestige. This stay will consist of 8-hour working days in which the physiotherapist will share their daily work with professionals versed in the area, being able to implement the most avant-garde and innovative therapeutic strategies of oxygenation in their praxis.

During the 3 weeks in which the practical period takes place, you will work side by side with real professionals of Hyperbaric Medicine with years of experience in the clinical management of patients"

TECH and its team of experts in Hyperbaric Medicine have planned this program based on a schedule according to the labor demand of the current market. In this way, and during the 3 weeks in which the program is developed, the graduate will access the selected center from Monday to Friday with 8 consecutive hours of work next to an assistant specialist. Thanks to this, they will be able to work alongside a professional with a long and extensive career in the sector and treat patients based on the most innovative clinical and therapeutic strategies of oxygenation.

In this completely practical program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare in conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

It is, therefore, a unique opportunity to catch up on the advances that have been made in this field, as well as on the management of tools such as the hyperbaric chamber or the biomedical technology that has demonstrated the best results to date. All this in the innovative hospital of the future, where you will be able to implement in your practice the techniques and guidelines that will allow you to improve your skills and your clinical service in a guaranteed way.

The practical teaching will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as transversal competences for the practice of Hyperbaric Medicine in the Physiotherapeutic field (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:

> You will work with the most innovative and cutting-edge hyperpathic technology for the evaluation and treatment of injuries caused by various causes: animal bites, smoking, poisoning, etc"

Module	Practical Activity
Hyperbaric Oxygenation Treatment (HBOT)	Apply technical and therapeutic safety of new generation hyperbaric chambers
	Collaborate in the performance of mean pressures, micropressure, hyperbaria examinations
	Performing physiological assessment of oxygen and respiration
	Perform volumetric and solumetric effect analysis
	Assess hypoxia and types of hypoxia
Physiological Therapeutic Effects of HBOT	Provide support in the analysis of vasoconstriction
	Assess Angiogenesis and Vasculogenesis
	Assess the existence of osteogenesis in the patient
	Assess the Mitochondrial Function, Inflammation and Oxidative Stress
	Provide support in the analysis of oxidative stress and hyperbaric oxygen
Use HBOT in Wound Healing Process and Infectious Pathology	Apply Medium Pressure and Wound Healing
	Practice with patients with necrotizing infections
	Perform analysis of HBOT in Chronic Ulcers and Diabetic Foot
	Conduct burn examination
	Assess Injuries from Radiofrequency Lesions and Hyperbaric Oxygen
Use HBOT in Pain, Rheumatic Diseases and the Medical Clinic	Collaborate in the analysis of HBOT in altitude sickness
	Practice in mechanism of action in analgesia, especially in patients with neuropathic pain and hyperbaric oxygen
	Assess Arthropathies and Collagenopathies
	Perform HBOT in Dysfunctional Neurosensitive Syndromes
	Apply HBOT in Fibromyalgia and hyperbaric oxygen
	Examine hyperbaric oxygen in Diabetes metabolism and severe anemias
Indications and Contraindications of Hyperbaric Medicine	Analyze the absolute and relative contraindications of Hyperbaric Medicine according to the clinical history of the patients
	To assess patients with absolute contraindications such as untreated pneumothorax, proven oxygen toxicity or claustrophobia
	Study the use of Hyperbaric Medicine in patients with relative contraindications such as congenital anomalies of the nose and throat, narcolepsy or acute nephritis

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way, professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.

General Conditions for Practical Training

The general terms and conditions of the internship program agreement shall be as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOS NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

Where Can I Do the Clinical Internship?

For the selection of the clinical center where the graduate will be able to carry out his internship, TECH and its team of experts have carefully studied the characteristics of the candidates, their trajectory, the quality of their services and their adaptation to the latest developments in the field of Hyperbaric Medicine. Thanks to this, it has been possible to create a training offer of the highest level, making available to the physiotherapist the possibility of accessing an entity of international prestige where they can work on the improvement of their skills for the application of therapeutic oxygenation.

TECH only chooses the highest level companies as internship centers, guaranteeing a quality stay where the graduate will have access to the most innovative professional equipment"

The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:

CornerSalud

Country
Spain

City
Madrid

Address: Av. de la Coruña, 68, 28231 Las Rozas de Madrid, Madrid

Hyperbaric Medicine Clinical Center with oxygen therapy

Related internship programs:
Hyperbaric Medicine

Physiotherapy

Sabier Fisiomedic

Country
Spain

City
Madrid

Address: C. María Zambrano, 3, Local 8-9, 28522 Rivas-Vaciamadrid, Madrid

Center specialized in Physiotherapy, Osteopathy, Aesthetic Medicine, Podiatry, Biomechanics, Facial and Body Aesthetics.

Related internship programs:
- Diagnosis in Physiotherapy
Sports Physiotherapy

09

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: Relearning.
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the New England Journal of Medicine have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Physiotherapists/kinesiologists learn better, faster, and more sustainably over time.

> With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.

According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions of professional physiotherapy practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

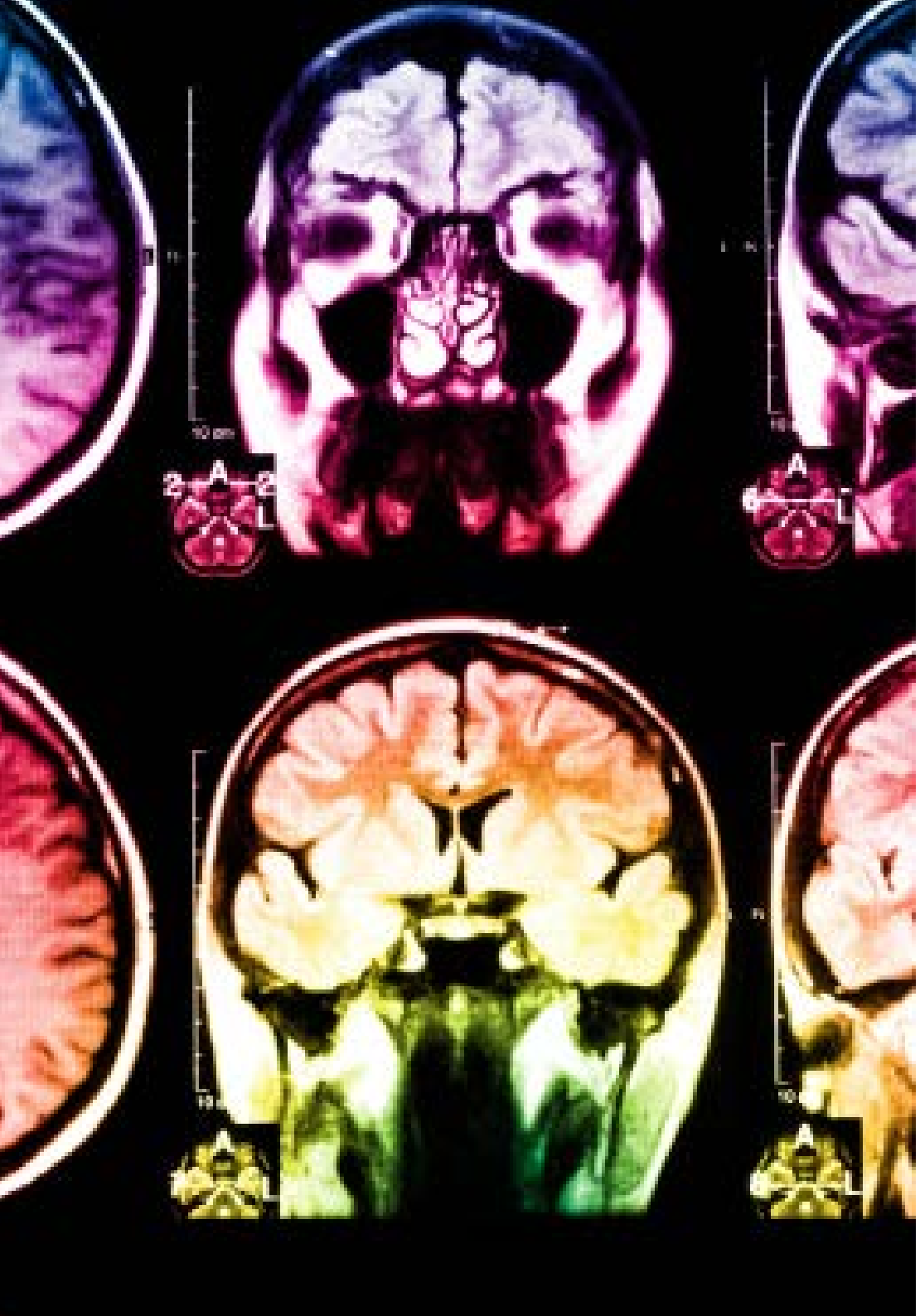
1. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

The physiotherapist/kinesiologist will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5. years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

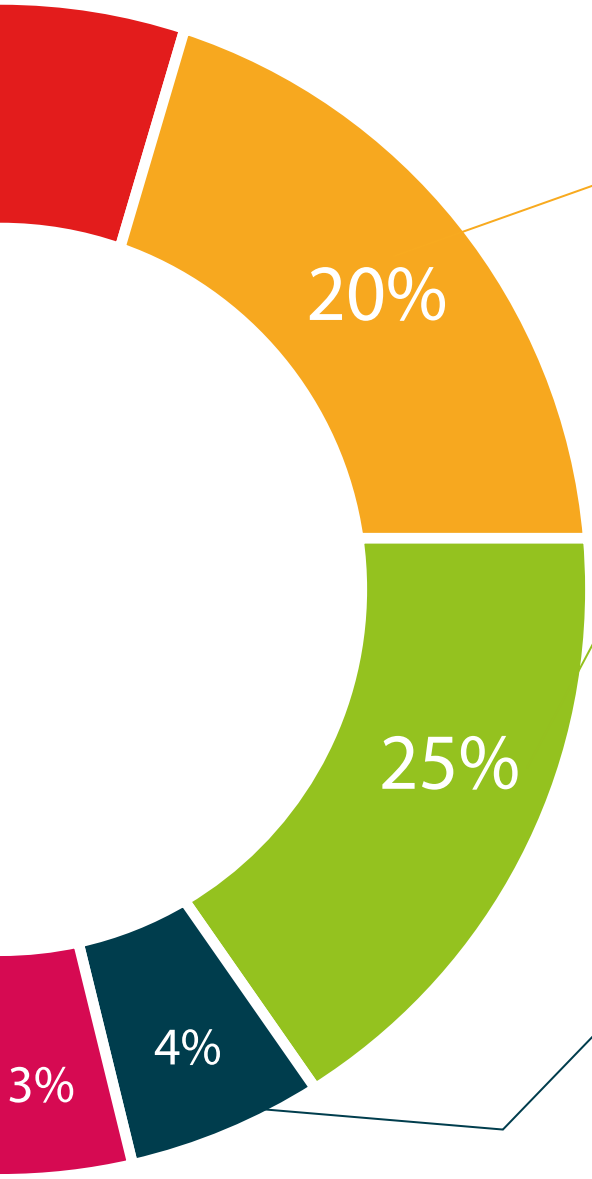
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.



Case Studies

Students will complete a selection of the best case studies chosen specifically for this situation. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

10

Certificate

The Hybrid Professional Master's Degree in Hyperbaric Medicine guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid diploma issued by TECH Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This Hybrid Professional Master's Degree in Hyperbaric Medicine contains the most complete and up-to-date program on the professional and academic field.

After the student has passed the assessments, they will receive their corresponding Hybrid Professional Master's Degree certificate issued by TECH Technological University via tracked delivery*.

In addition to the diploma students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

Title: Hybrid Professional Master's Degree in Hyperbaric Medicine

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months.

Certificate: TECH Technological University

Teaching Hours: 1,620 h.


tech technological university

Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

HYBRID PROFESSIONAL MASTER'S DEGREE

in

Hyperbaric Medicine

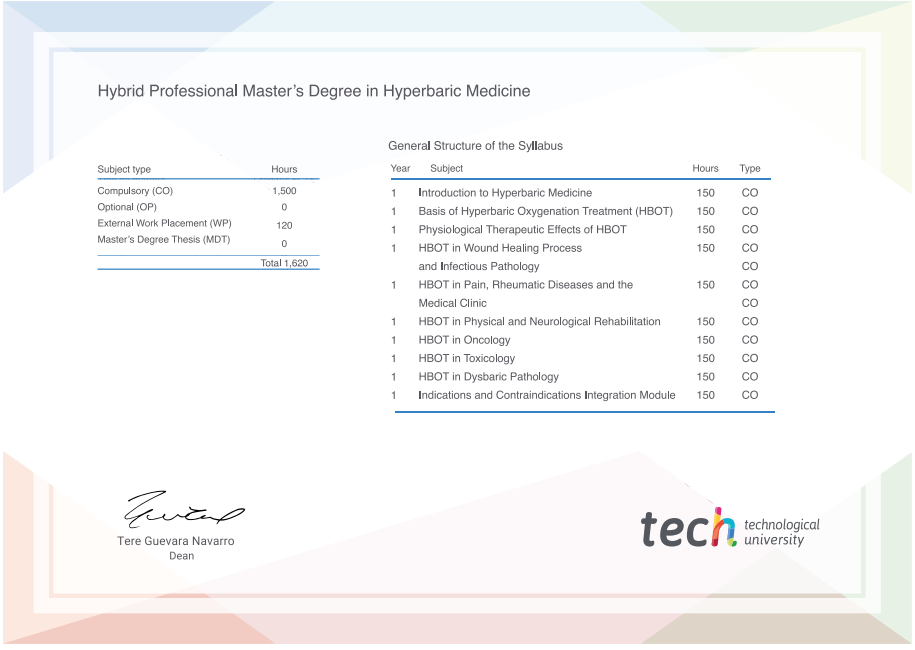
This is a qualification awarded by this University, with a duration of 1,620 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Hybrid Professional Master's Degree in Hyperbaric Medicine

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	120
Master's Degree Thesis (MDT)	0
	Total 1,620

General Structure of the Syllabus

Year	Subject	Hours	Type
1	Introduction to Hyperbaric Medicine	150	CO
1	Basis of Hyperbaric Oxygenation Treatment (HBOT)	150	CO
1	Physiological Therapeutic Effects of HBOT	150	CO
1	HBOT in Wound Healing Process and Infectious Pathology	150	CO CO
1	HBOT in Pain, Rheumatic Diseases and the Medical Clinic	150	CO CO
1	HBOT in Physical and Neurological Rehabilitation	150	CO
1	HBOT in Oncology	150	CO
1	HBOT in Toxicology	150	CO
1	HBOT in Dysbaric Pathology	150	CO
1	Indications and Contraindications Integration Module	150	CO

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Dean

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost

tech universidad tecnológica

Hybrid Professional Master's Degree

Hyperbaric Medicine

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months.

Certificate: TECH Technological University

Teaching Hours: 1,620 hours.

Hybrid Professional Master's Degree
Hyperbaric Medicine

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