

# Postgraduate Certificate

## Current Importance of Laboratories in Hematology and Hemotherapy





## Postgraduate Certificate

### Current Importance of Laboratories in Hematology and Hemotherapy

- » Modality: online
- » Duration: 4 weeks
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/pk/medicine/postgraduate-certificate/current-importance-laboratories-hematology-hemotherapy](http://www.techtitute.com/pk/medicine/postgraduate-certificate/current-importance-laboratories-hematology-hemotherapy)

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# 01

## Introduction

Blood-related diseases require specific laboratories in which to carry out analysis and research. It is important that professionals know the importance of this type of facilities, so this training focuses on the study of the current importance of the laboratory in hematology and hemotherapy.





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*Learn about the latest advances in the specialty and get yourself up to date in order to provide the best care to your patients”*

Scientific medical advances in the last 10 years have made it easier to change the notion that hematology is confined to mere hematology, so this teaching program aims to focus the professional development of specialists in the many areas of the specialty (hematologic oncology, genetics, immunotherapy, cardiovascular risks, blood transfusions, bone marrow transplants, anticoagulants, anemias, artificial blood .... ) so that excellent care is provided to hematology patients based on access to the most recent and innovative medical advances.

In recent years there have been continuous advances that have generated a great incorporation of knowledge, both in basic concepts and laboratory techniques. All this has substantially increased the body of doctrine of this medical specialty, incorporating new areas such as cytometry, cytogenetics, or molecular biology. All this has substantially increased the body of doctrine of this medical specialty, incorporating new areas such as cytometry, cytogenetics, or molecular biology. These advances require very specific learning for the development of an excellent medical practice.

This Postgraduate Certificate on Importance of Laboratories in Hematology and Hemotherapy endorses the latest advances in research and the highest scientific evidence, with a robust and didactic format program that positions it as a teaching product of the highest scientific rigor at international level, aimed at health professionals who in their daily clinical practice are faced the care of patients or populations with hemorrhagic diseases. In addition, the program is based on a multidisciplinary approach to its subjects, which allows training and professional development in different areas.

This **Postgraduate Certificate in Current Importance of Laboratories in Hematology and Hemotherapy** contains the most complete and up-to-date program on the market. The most important features of the program include:

- ◆ Clinical symptoms cases presented by experts in hematology.
- ◆ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional.
- ◆ Diagnostictherapeutic developments on assessment, diagnosis, and treatment in hematology patients..
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning.
- ◆ The Iconography of clinical and diagnostic imaging tests.
- ◆ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course..
- ◆ With special emphasis on evidence-based medicine and research methodologies in hematology.
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- ◆ Content that is accessible from any, fixed or portable device with an Internet connection..



*With the TECH Postgraduate Certificate in Current Importance of Laboratories in Hematology and Hemotherapy you have the opportunity to update your knowledge conveniently and without sacrificing the utmost scientific accuracy”*

“

*This course is the best investment you can make to acquire the best and most up-to-date training in Current Importance of the Laboratory in Hematology and Hemotherapy"*

The teaching body is made up of respected and renowned professionals with extensive experience in healthcare, teaching, and research, who have work in many countries where these diseases are prevalent.

The methodological design of this course, developed by a multidisciplinary team of e-learning experts, integrates the latest advances in educational technology for the creation of numerous multimedia educational tools allow the professional, based primarily on the problem-based learning method, to address real problems in their daily clinical practice, which will allow them to advance by acquiring knowledge and developing skills that will impact their future professional work.

It should be noted in this course that each of the contents generated, as well as the videos, self-evaluations, clinical cases and exams, have been thoroughly reviewed, updated, and integrated by the team of experts that make up the faculty, to ensure that the learning process is orderly and instructive in order to achieve the program's objectives.

*This course offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations.*

*It includes clinical cases to bring the program's degree as close as possible to the reality of care in medicine.*



# 02 Objectives

The main objective of this course is to improve healthcare professionals, through the acquisition of the most up-to-date and innovative scientific knowledge in the field of hematology and hemotherapy that will allow them to develop the skills that will turn their daily clinical practice into a representation of the best available scientific evidence, with a critical, innovative, multidisciplinary, and integrative approach.





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*This program will provide you with a sense of confidence in your medical practice, which will help you grow personally and professionally”*



## General Objective

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- ◆ Update the specialist's knowledge through the latest scientific evidence in the diagnosis and treatment of hematological diseases, in order to develop measures to prevent, diagnose, treat, and rehabilitate hematological diseases, with a multidisciplinary and integrative approach that supports medical care with the highest quality standards for managing and monitoring hematology patients.

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*Don't miss the opportunity and get up to date on the latest laboratory news in hematology and hemotherapy to incorporate them into your daily medical practice”*





## Specific Objectives

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- ◆ Provide training and - practical/theoretical improvement that will ensure a reliable clinical diagnosis supported by the efficient use of diagnostic methods
- ◆ Explain the complex pathophysiologic and etiopathogenic interrelationships in the mechanisms of hematologic disease onset
- ◆ Get up to date in molecular and cellular biology, providing general concepts of modern molecular terminology, essential for future medical practice, both at clinical and diagnostic laboratory levels.
- ◆ Get up to date in the aspects of pathological anatomy, biochemistry, immunology, genetics, and molecular biology of hematologic diseases.
- ◆ Emphasize the role of the rational use of diagnostic technologies when studying these patients
- ◆ Explain the latest advances introduced in clinical practice on hematopoietic progenitor cell transplantation

# 03

# Course Management

Renowned and recognized medical specialists with numerous publications, teaching experience, and professional experience in many countries, where many of the diseases studied have a high morbimortality, participate in the teaching program. The teaching team is made up of a multidisciplinary faculty from various medical specialties, such as hematology, internal medicine, pediatrics, gynecology and obstetrics, pathological anatomy, and pharmacology who are involved in the care of these patients.





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*Learn about the latest advances in hematology  
and hemotherapy from leading professionals"*

## International Guest Director

Dr. Joseph Hai Oved is a pediatric hemato-oncology specialist at Memorial Sloane Kettering Cancer Center, considered one of the best cancer centers in the world. His work focuses on stem cell and bone marrow transplantation, as well as cell therapies, to treat non-cancerous diseases. His work in the field of transplantation to patients with difficult-to-treat immune dysfunctions or inherited immune deficiencies, as well as those with bone marrow failure syndromes, is particularly noteworthy.

His research is prolific in the hemato-oncology area, seeking new ways to personalize transplantation to achieve a precise cure with minimal side effects. He has studied in depth the effects of the different techniques used to manipulate donated stem cells, extracting or adding specific cells of interest. He has also analyzed how exposure to different conditioning agents (chemotherapies or other drugs used to prepare the body for transplantation) affect outcomes. His work has advanced the identification of biomarkers to more accurately predict transplant outcomes.

Joseph is a member of several national and international groups in bone marrow transplantation, hematology and immunology. He serves on committees of many of these organizations, where they discuss potential future therapies, clinical trials and efforts to further advance the field of pediatric transplantation and cellular therapies worldwide.

All his scientific contribution places him as a reference in his field, receiving several awards. These include two fellowships awarded by the Howard Hughes Medical Institute, one of the largest privately funded organizations for biological and medical research in the United States. He also received a fellowship in immunology from the Weizmann Institute of Science, considered one of the most advanced multidisciplinary research institutions in the world.



## Dr. Hai Oved, Joseph

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- Pediatrician specialized in hemato-oncology at the MSK Cancer Center - New York
- Member of the Scientific Advisory Board of Emendo Biotherapeutics.
- Managing Partner of New World Health, LLC
- Observer on the board of BioTrace Medical Inc.
- Pediatrician specializing in hemato-oncology at Children's Hospital of Philadelphia
- M.D. from NYU School of Medicine
- Fellowship in pediatric hemato-oncology at Children's Hospital of Philadelphia
- Residency in Pediatrics at New York Presbyterian Weill Cornell Medical College

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## Guest Director



### Dr. Joaquín Martínez-López

- ◆ Head of the Hematology Department at the 12 de Octubre Hospital, Madrid
- ◆ PhD in Medicine from the Complutense University of Madrid.
- ◆ Hematology Medical Specialist
- ◆ Director of the translational research group and the early clinical trials unit in hematology at 12 de Octubre Hospital
- ◆ More than 140 publications in international scientific journals
- ◆ President of AltumSequencing

## Professors

### Dr. Carreño Gómez-Tarragona, Gonzalo

- ◆ Specialist physician at the 12 de Octubre University Hospital
- ◆ Degree in Medicine. Autonomous University of Madrid. 2013
- ◆ Advanced Master's Degree in Hematopoietic Transplantation. University of Valencia. 2019
- ◆ Cytology Course in Myelodysplasia. Del Mar Hospital. 2017
- ◆ Teaching collaborator for the following subjects: Hematology and Hemotherapy, Degree of Medicine (Complutense University of Madrid); and Advances in Vascular Function, Degree of Medicine (Autonomous University of Madrid).
- ◆ Participation in the Clinical Research Ethics Committee at the 12 de Octubre University Hospital. 2019
- ◆ Participation in national and international conferences
- ◆ Distinction as Best Scientific Communication. VII National Research Conference for Undergraduate Students in Health Sciences. Complutense University of Madrid. 2013

### Dr. Sánchez Pina, José María

- ◆ Attending Physician in the area of hospitalization and hematopoietic transplantation. Member of the cell therapy group. Since 2017
- ◆ Degree in Medicine. University of Alcalá. 2006-2012
- ◆ Advanced Master's Degree in Hematopoietic Transplantation, 4th edition, University of Valencia
- ◆ Resident intern of Hematology and Hemotherapy at 12 de Octubre University Hospital in Madrid. 2013-2017
- ◆ Teaching collaborator in the Advanced Master's Degree in Translational Medicine. The Complutense University of Madrid; and Advanced Master's Degree in Organ and Tissue Transplants. European University of Madrid





**Dr. Rodríguez Rodríguez, Mario**

- ◆ Specialist in Thrombophilia and Hemostasis consultation and in basic and special coagulation laboratory at the 12 de Octubre University Hospital. Since June 2017
- ◆ Graduate in Medicine and Surgery from the Complutense University of Madrid. Class of 2006 - 2012
- ◆ Hematology on-call duty as an attending physician (FEA). Since June 2017.
- ◆ Medical Intern Resident in Hematology and Hemotherapy at the 12 de Octubre University Hospital (21/05/2013 - 21/05/2017)
- ◆ Participation in quality work for ENAC accreditation in the coagulation laboratory at the 12 de Octubre University Hospital
- ◆ Usability study/evaluation of the cobas t711 coagulometer, Roche Diagnostics
- ◆ Participation in the following publications: "Evaluation of The MD Anderson Tumor Score for Diffuse Large B-cell Lymphomain the Rituximab Era", "Clinical course and risk factors for mortality from COVID-19 inpatients with haematological malignancies" and "Thrombosis and antiphospholipid antibodies in patients with SARS-COV-2 infection (COVID-19)", among others.

# 04

## Structure and Content

The teaching program has been created by a group of professors and medical professionals from various specialties, with extensive medical, research, and teaching experience in several countries in Africa, Central and South America, interested in integrating the latest and most current scientific knowledge in hematology and hemotherapy to ensure training and professional development to improve the daily clinical practice of professionals.





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*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too"*

## Module 1. Update on the Importance of Laboratories in Hematology and Hemotherapy

- 1.1. Development of Specialized Laboratory Techniques in Recent Years:
  - 1.1.1. Handling of Autoanalyzers
  - 1.2.2. Cytomorphology of Peripheral Blood
  - 1.2.3. Bone Marrow Cytomorphology Cytochemical Techniques Bone marrow Aspiration, Medulogram
- 1.2. Diagnostic Techniques of Anemic Syndrome: Recent Advances
  - 1.2.1. Hemoglobin and Hematocrit
  - 1.2.2. Peripheral Lamina
  - 1.2.3. Reticulocyte Count
  - 1.2.4. Hemolysis Tests
  - 1.2.5. Other Tests for Studying Anemias
- 1.3. Flow Cytometry in the Diagnosis of Hematologic Diseases
  - 1.3.1. Fundamentals and Methodology of the Cytometry Technique
  - 1.3.2. Usefulness in the Diagnosis of Hematologic Diseases
- 1.4. Basic Cytogenetic and Molecular Biology Techniques:
  - 1.4.1. Principles of Cytogenetics
  - 1.4.2. Cytogenetics and Genetic Rearrangements in Hematologic Diseases
  - 1.4.3. Cytogenetic Techniques
  - 1.4.4. Principles and Techniques of Molecular Biology in Hematology
- 1.5. New Techniques of Hemostasis and Thrombosis:
  - 1.5.1. Tests that Measure the Functioning of Primary Hemostasis
  - 1.5.2. Tests that Measure the Functioning of Secondary Hemostasis
  - 1.5.3. Evidence of Physiological Inhibitors of Coagulation



- 1.6. Immunohematology Techniques: Present and Future
  - 1.6.1. Basis and Methodology of Immunohematology Techniques
  - 1.6.2. Usefulness for Diagnosing Hematologic Diseases
- 1.7. Therapeutic Apheresis Techniques: Current Developments
  - 1.7.1. Plasmapheresis
  - 1.7.2. Leukoapheresis
  - 1.7.3. Erythroapheresis
  - 1.7.4. Thrombocytapheresis
- 1.8. Current Techniques for the Procurement, Manipulation and Preservation of Hematopoietic Progenitor Cells
  - 1.8.1. Progenitor Cell Donor Selection
  - 1.8.2. Progenitor Mobilization in Autologous and Healthy Donor
  - 1.8.3. Apheresis of Hemopoietic Progenitors in Autologous and Allogeneic Transplantation
  - 1.8.4. Bone Marrow Extraction by Surgical Procedure
  - 1.8.5. Lymphocyte Collection: Procedure, Indications, Complications
  - 1.8.6. Product Suitability Tests: Minimum Cellularity, Viability, Microbiological Studies
  - 1.8.7. Progenitor Infusion: Procedure and Complications



*Take advantage of the opportunity and step up as a professional"*

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning.***

This teaching system is used 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.



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*Discover Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can 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 potential 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 in professional medical practice.



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*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. Students 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 student 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.



## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.



*The physician 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (we 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.



In this program you will have access to the best educational material, prepared with you 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides. In our virtual library you will have access to everything you need to complete your training.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Re-testing**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**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 our future difficult decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06

# Certificate

Through a different and stimulating learning experience, you will be able to acquire the necessary skills to take a big step in your training. An opportunity to progress, with the support and monitoring of a modern and specialized university, which will propel you to another professional level.



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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This **Postgraduate Certificate in Current Importance of Laboratories in Hematology and Hemotherapy** contains the most complete and up-to-date program on the market.

Once the student has passed the evaluations, he/she will receive by mail with acknowledgment of receipt their corresponding Postgraduate Certificate Degree issued by **TECH Technological University**

The certificate issued by **TECH Technological University** will specify the qualification obtained through the **Postgraduate Certificate**, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **TECH Postgraduate Certificate in Current Importance of Laboratories in Hematology and Hemotherapy**

Official Number of Hours: **150 hours**.



\*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.





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in Hematology and Hemotherapy

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- » Dedication: 8h/week
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