

Postgraduate Certificate

Processing of Blood Components





Postgraduate Certificate Processing of Blood Components

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of Hours: 150 h.

Website: www.techtute.com/in/medicine/postgraduate-certificate/processing-blood-components

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01

Introduction

The fundamental objective of blood processing is to ensure that the blood components to be transfused are of optimum quality. To this end, after blood donation, the blood is processed in such a way as to achieve maximum utilization of the components and to ensure, as far as possible, the safety of the transfusion. In this sense, it is also essential to be aware of the different possibilities that arise before the clinician who indicates the transfusion. That is, knowledge of the modifications that can be applied to blood components to adapt them to potential recipients. This TECH program delves into blood components, covering everything from their procurement to the quality criteria to be observed in production.



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You will learn whole blood fractionation which implies a better use of a resource by definition limited, contributing to the excellence of your medical work in this specific field of medicine"

After blood donation, the processing of the blood is necessary, on the one hand, to achieve maximum utilization of the components and, on the other hand, to ensure, as far as possible, the safety of the transfusion. Ensuring that the blood components to be transfused are of optimum quality is thus the fundamental objective of blood processing.

At the same time, it is essential to be aware of the different possibilities to be considered for the clinician who indicates the transfusion. In other words, the knowledge of the modifications that can be applied to the components, in order to adapt them to the possible recipients, is the central point of this program.

The ultimate objective of this Postgraduate Certificate in Blood Component Processing is the fractionation of whole blood, which implies a better use of a limited resource by definition, and therefore, this TECH program delves into blood components, from their collection to the quality criteria that must be observed in their production.

Likewise, each of the products, the modifications that can be made to them, such as irradiation, cryopreservation and pathogen inactivation techniques, will be detailed. Finally, emphasis will be placed on the labeling of products, which follows the standards of the International Society of Blood Transfusion (ISBT), which must be respected, so that the exchange of components between different countries is possible when necessary.

In addition, it is a 100% online Postgraduate Certificate, so the student has the ease of being able to take it comfortably, wherever and whenever he/she wants. All you need is a device with internet access to take your career one step further. A modality in line with the current times with all the guarantees to position the medical professional in a highly demanded field.

This **Postgraduate Certificate in Blood Component Processing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Transfusion Medicine
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ With a special emphasis on evidence-based medicine and research methodologies in the field of transfusion medicine
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any device with an Internet connection



The fundamental goal of blood processing is to achieve optimal quality levels of blood components to be transfused, and learning how to do this will be your primary objective in this Postgraduate Certificate"

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Thanks to the 100% online mode of this Postgraduate Certificate, TECH offers you the opportunity to specialize in the best way that suits your lifestyle, just through a device with internet access”

The program's teaching staff includes professionals from the sector who contribute their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn 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 professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will learn about product labeling, which follows International Society of Blood Transfusion (ISBT) standards to enable the exchange of components between countries when necessary.

You will deepen your knowledge of the modifications that can be applied to blood components, in order to adapt them to the possible recipients with total success.



02 Objectives

The purpose of this Postgraduate Certificate is for the student to achieve the proposed objectives, so that he/she can expand his/her knowledge in the Processing of Blood Components through the learning of quality content and a unique and innovative teaching methodology. To this end, a team of medical professionals has poured its knowledge and experience in the development of the points of this curriculum, which will propel the professional from an up-to-date and innovative perspective, with full preparation for the achievement of their professional goal. Thus, the student is well on his way to excellence in his daily medical work in the field of Transfusion Medicine.





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One of your key objectives will be to delve into blood components, covering everything from the procurement of blood components to the quality criteria that must be observed in production”



General Objectives

- ◆ Know everything about the process of blood donation and blood components
- ◆ Understand hemovigilance as a transversal process involving the entire transfusion chain, from donor to patient

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You will learn in detail the modifications that can be made to blood components, such as irradiation, cryopreservation and pathogen inactivation techniques”





Specific Objectives

- ◆ Delve into blood components, from their procurement to the quality criteria that must be observed in their production
- ◆ Learn in detail about each of the products, the modifications that can be made to them, such as irradiation, cryopreservation and pathogen inactivation techniques
- ◆ Emphasize the labeling of products, which follows the standards of the International Society of Blood Transfusion (ISBT), which must be respected in order to allow the exchange of components between countries when necessary

03

Course Management

TECH has prestigious experts in the medical field of hematology so that the student acquires a solid knowledge in the specialty of Transfusion Medicine, especially in the processing of blood components. Therefore, this Postgraduate Certificate has a highly qualified teaching staff, whose extensive experience in this medical field brings quality to the program, thus providing the student with the best tools for the development of their skills during the program, knowing in depth the usefulness of blood components. In this way, the future professional has the guarantees that he/she demands to specialize with the best and boost his/her academic career in a sector that is increasingly in demand and in continuous development.





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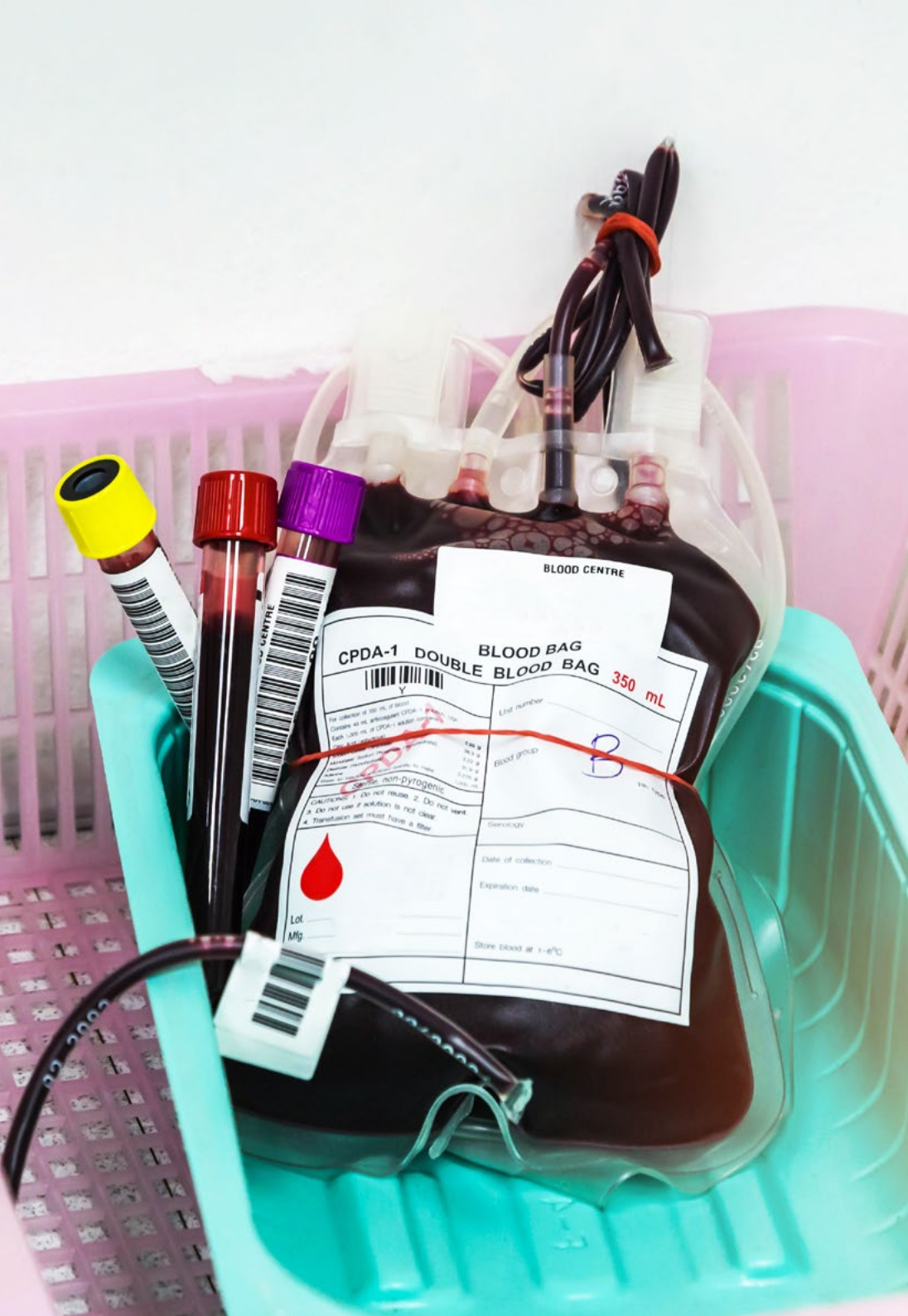
Acquire the skills you need to gain a thorough understanding of blood component processing and succeed in this field of Transfusion Medicine”

Management



Dr. Alcaraz Rubio, Jesús

- ♦ Head of the Hematology Department at the 12 de Octubre Hospital (Madrid)
- ♦ Head of the Hematology Department at Mesa del Castillo Hospital, in Murcia
- ♦ Head of the Oncohematological Day Unit Hospital Viamed in Alcantarilla, Murcia
- ♦ Emergency Specialist at the Rafael Méndez Hospital, in Lorca, Murcia
- ♦ Head of the Hematology Department at the Hospital Virgen de la Caridad in Cartagena
- ♦ Member of Sermo's Medical Advisory Board
- ♦ Associate Professor of Emergency and Clinical Simulation at the Universidad Católica San Antonio in Murcia
- ♦ Degree in Medicine and Surgery from the University of Murcia
- ♦ Specialty in Hematology Hemotherapy



Professors

Ms. Sánchez López, Juana María

- ◆ Nurse of the Anesthesia and Resuscitation Unit of Hospital Rafael Méndez
- ◆ Degree in Nursing from the University of Murcia
- ◆ Master's Degree in Public Health
- ◆ Master's Degree in Occupational Risk Prevention

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Our teaching team will provide you with all their knowledge so that you are up to date with the latest information on the subject”

04

Structure and Content

The structure of the contents of this Postgraduate Certificate has been designed based on the knowledge of Transfusion Medicine focused on the Processing of Blood Components, so that the professional can deepen and update their knowledge in this field of medicine. Thus, the teaching team of this program has developed a syllabus whose content offers a broad perspective of everything involved in this process, from obtaining blood components by fractionation of whole blood to apheresis procedures in the donation of blood components or the indications of irradiated blood components, among others. In this way, the student will acquire the skills to develop professionally in this area of medicine thanks to quality content and the best teaching methodology.





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You will learn the case of hyperimmune plasma and its use in the SARS-CoV-2 pandemic”

Module 1. Processing of Blood Components

- 1.1. Obtaining Blood Components by Whole Blood Fractionation
 - 1.1.1. Fractionation of Whole Blood and Apheresis Procedures
 - 1.1.2. Anticoagulant and Preservative Solutions
 - 1.1.3. Leukodepletion of Blood Components
 - 1.1.4. Cryoprecipitate
- 1.2. Apheresis Procedures in Blood Component Donation
 - 1.2.1. Mono and Multicomponent Apheresis
 - 1.2.2. Apheresis Machines
- 1.3. Quality Requirements for Blood and Blood Components
 - 1.3.1. The Transfusion Accreditation Committee's Hemotherapy Standards
- 1.4. Whole Blood and Red Blood Cell Concentrates
 - 1.4.1. Indications for Whole Blood and Red Blood Cell Concentrate
 - 1.4.2. Modifications of Red Blood Cell Components: Washing, Aliquoting, Irradiation and Inactivation of Pathogens
- 1.5. Therapeutic Platelet Units
 - 1.5.1. Indications for Platelet Transfusion
 - 1.5.2. Modifications of Platelet Components: Washing, Aliquoting, Irradiation and Inactivation of Pathogens, Reconstituted Whole Blood
- 1.6. Plasma as a Blood Component
 - 1.6.1. Transfusion and Industrial Use
 - 1.6.2. The Production of Plasma Derivatives
 - 1.6.3. The Case of Hyperimmune Plasma and its Use in the SARS-CoV-2 Pandemic
- 1.7. Cryopreservation of Blood Components
 - 1.7.1. Cryopreservation Techniques Applied to Blood Components
 - 1.7.2. The Use of Cryopreserved Blood Components
- 1.8. Irradiation of Blood Components
 - 1.8.1. Sources Used for Irradiation
 - 1.8.2. Blood Components that Can Be Irradiated
 - 1.8.3. Indications for Irradiated Blood Components
- 1.9. Pathogen Inactivation Techniques in Blood Components
 - 1.9.1. Utility of Blood Components
- 1.10. Labeling of Blood Components





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You will master the techniques of inactivation of pathogens in blood components thanks to a quality syllabus and the best teaching staff”

05

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.



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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. Specialists 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 in the physician's professional 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 achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into 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.



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.

Professionals will learn through real cases and by resolving 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, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. 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 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 (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's 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.



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



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".



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.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



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.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06 Certificate

The Postgraduate Certificate in Blood Component Processing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Blood Processing of Blood Components** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Certificate in Processing of Blood Components**

Official N° of Hours: **150 h.**



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

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
development languages
virtual classroom



Postgraduate Certificate
Processing of
Blood Components

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of Hours: 150 h.

Postgraduate Certificate

Processing of Blood Components

