

# Postgraduate Certificate Limb Reconstruction





## Postgraduate Certificate Limb Reconstruction

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitude.com/in/medicine/postgraduate-certificate/limb-reconstruction](http://www.techtitude.com/in/medicine/postgraduate-certificate/limb-reconstruction)

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# 01

# Introduction

Open wounds on limbs (arms, legs, hands and feet) require reconstruction, since any exposed bone that is not covered by vascularized soft tissue is at risk of osteomyelitis, bone necrosis and sepsis. It is therefore necessary for surgeons to be aware of all the latest scientific evidence in this field, in order to deal with cases of amputation, trauma or limb wounds in the best possible way, offering excellent quality surgical treatment. This knowledge will be the professional's main asset when it comes to entering a labor market that is increasingly demanding expert surgeons in this field.





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*Limb Reconstruction has experienced a great advance in recent years. With this course, learn about the latest scientific postulates on the subject"*

Limb reconstruction is an essential part of plastic surgery. The aim of this type of intervention is to protect/cover defects and open wounds in the leg, arms, hands and feet in order to offer a good quality of life to the patient and to avoid amputation.

In this sense, this course will address the treatment of pathologies caused by trauma, tumor resection and congenital and chronic diseases such as peripheral vascular disease and diabetes (mainly in the lower limbs). These injuries require reconstruction since any exposed bone that is not covered by vascularized soft tissue is at risk of osteomyelitis, bone necrosis and sepsis. Open wounds cause chronic pain and inability to move freely. Exposed tendons become dry and necrotic and exposed blood vessels are at risk of rupture.

During the last few years, there have been great advances in plastic surgery techniques such as free tissue transfer technologies. These and other advanced techniques will be outlined in this course, as they have led to an evolution in wound care, allowing limbs to be saved that would otherwise have been amputated.

Likewise, the field of limb reconstruction will be discussed during this training focusing on local anesthetic techniques, tendon reconstruction, limb replantation and the use of bone flaps and grafts as treatment options.

Everything through a 100% online training that makes it easier to combine studies with the rest of the daily activities in the surgeon's life. Thus, the doctor will only need an electronic device (Smartphone, Tablet, PC) with Internet connection to open up a wide horizon of knowledge that will allow him to position himself as a professional of reference in the sector.

This **Postgraduate Certificate in Limb Reconstruction** includes the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Development of more than 10 clinical cases, recorded with POV (Point Of View) systems from different angles, presented by experts in surgery and other specialities. 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 practice.
- ♦ Presentation of practical workshops on procedures and techniques.
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course.
- ♦ Action protocols and clinical practice guidelines, which cover the most important latest developments in this specialist area.
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- ♦ Special emphasis on test-based medicine and research methodologies in surgical procedures.
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*This Postgraduate Certificate in Limb Reconstruction contains the most complete and up-to-date scientific program on the market"*



*Thanks to this complete course that TECH has prepared for you, you will acquire the best and most up-to-date training in Limb Reconstruction"*

*It is the best value for money training program on the market.*

*Improve your specialized surgical practice with this training that will catapult you to success in your profession.*

The teaching staff includes a team of healthcare professionals, who bring their experience to this training program, as well as renowned specialists from leading scientific societies.

The multimedia content developed with the latest educational technology will provide the surgeon with situated and contextual learning, i.e., a simulated environment that will provide immersive training program to train in real situations.

This program is designed around Problem Based Learning, whereby the surgeon must try to solve the different professional practice situations that arise during the course. For this purpose, you will be assisted by an innovative interactive video system created by renowned experts in the field of Reconstructive Plastic Surgery, with extensive teaching experience.



# 02 Objectives

The most prestigious professionals in the field of Reconstructive Plastic Surgery have designed for TECH this complete professional updating and recertification program with the aim of ensuring that doctors in the sector are up to date with new scientific and technical knowledge in the field of reconstructive plastic surgery of the limbs. This refresher in surgeons' professional competencies and the acquisition of new skills and abilities will be the professional's main asset when it comes to successfully entering a sector that is increasingly demanding specialized professionals in this field.







“TECH provides in all its trainings a perfect mix of theoretical and practical contents with the objective of leading professionals to success in their careers”



## General Objectives

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- Address truncal anesthesia techniques.
- Analyze tendon suturing techniques.
- Evaluate the flaps used in limb reconstruction.
- Introduce limb replanting techniques.
- Developing types and techniques of bone grafting



*Seize the moment and take the step to get up to date on the latest developments in Limb Reconstruction and become a prestigious surgeon"*





## Specific Objectives

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- ♦ Examine upper and lower limb regional anesthetic block techniques
- ♦ Analyze the new tendon sutures proposals
- ♦ Determine the types and techniques of flaps used in upper limb reconstruction.
- ♦ Develop expertise in musculoskeletal reconstruction and neural repair in limb replantation.
- ♦ Examine finger, upper and lower limb replantation techniques.
- ♦ Develop the types and techniques used in the different types of bone grafts and osteoinductive materials.

# 03

# Course Management

These materials have been developed by a team of leading professionals in the surgical field, who work in the most important national and international hospitals. Bringing to the program the experience they have gained throughout their careers. Likewise, this great teaching team also includes a series of specialists who complete the contents of the course in an interdisciplinary and transversal way that will help the student to acquire complete knowledge and take into account each and every one of the important factors when intervening in cases of patients requiring lip and palate reconstructions.





Precaution, Protect Equipment.  
Do Not Place Anything on Deck Area.  
Secure Tablet. Check Before Closing Lid.

EMBERTSON  
ID: DOWNSIDE SCENARIO 19

Select Vet...  
Select Tech...  
FOREFTLOCK

Left Forelimb  
FOREFTLOCK DP

Right Forelimb  
FOREFTLOCK DP

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*With this training, you will have at your disposal the best teaching staff in the market that will train and guide you towards success in your practice as a of limbs reconstructive surgeon"*

## International Guest Director

Peter Henderson, M.D. is a reconstructive surgeon and microsurgeon based in New York City who focuses on breast reconstruction and lymphedema treatment. He is Chief Executive Officer and Director of Surgical Services for Henderson Breast Reconstruction. In addition, he is an Associate Professor of Surgery (Plastic and Reconstructive Surgery) and Director of Research at the Icahn School of Medicine at Mount Sinai.

Dr. Henderson received a Bachelor of Fine Arts degree from Harvard University, a medical degree from Weill Cornell Medical College and an MBA from the Stern School of Business at New York University.

He completed his residencies in general surgery and plastic surgery at NewYork-Presbyterian/Weill Cornell. He then completed a fellowship in reconstructive microsurgery at Memorial Sloan Kettering Cancer Center. In addition, he was Chief of Research in the Laboratory of Bioregenerative Medicine and Surgery during his residency in general surgery.

Through a variety of surgical approaches and techniques, he is committed to helping patients restore, maintain or improve their function and appearance. Dr. Henderson's clinical care is supported by his research and scholarly activities in the field of microsurgery and breast reconstruction.

Dr. Henderson is a Fellow of the American College of Surgeons and a member of many professional societies. He is a recipient of the Dicran Goulian Award for Academic Excellence in Plastic Surgery and the Bush Award for Excellence in Vascular Biology. He has authored or co-authored over 75 peer-reviewed publications and textbook chapters, as well as over 120 research abstracts, and has guest lectured nationally and internationally.



## Dr. Henderson, Peter

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- Director of Surgical Services at Henderson Breast Reconstruction
- Director of Research at Icahn School of Medicine at Mount Sinai
- Chief of Research, Laboratory of Bioregenerative Medicine and Surgery at Memorial Sloan Kettering Cancer Center
- M.D. from Weill Cornell Medical College
- Bachelor of Fine Arts from Harvard University
- Bush Award for Excellence in Vascular Biology

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*You will have access to a library of multimedia resources 7 days a week, 24 hours a day”*

## Management



### Dr. Castro de Rojas, Ligia Irene

- Doctor specialized in Obstetrics and Gynecology.
- Professor of Morphophysiology I and II at the Experimental School of Nursing, Faculty of Medicine, Universidad Central de Venezuela.
- Medical School Counselor
- Medical sonographer
- Resident physician at the Palo Negro outpatient clinic
- General Practitioner at Policlínica Coromoto



### Dr. Piña Rojas, Juan Luis

- Plastic and reconstructive surgeon. Maracay Central Hospital.
- Secretary of Academic Affairs, 2004-2005 period, Student Center, La Morita branch, Carabobo University.
- Chief Resident 2012-2014 Postgraduate of Plastic Surgery Maracay's Central Hospital.
- Academic Teaching Coordinator 2016-2018 postgraduate course in Plastic Surgery, Maracay Central Hospital.
- Postgraduate resident doctor of the 1st level in the department of Surgery at Maracay's central hospital from March 3, 2008 to December 2010. (Position earned by credential competition)
- Academic Teaching Coordinator 2016-2018 postgraduate course in Plastic Surgery, Maracay Central Hospital.





## Professors

### **Dr. Piña Aponte, Enzo Raúl**

- ♦ Oral and Maxillofacial Surgeon
- ♦ Oral and Maxillofacial Surgeon in Private Clinic
- ♦ Postgraduate Professor of Oral and Maxillofacial Surgery UC-IVSS,
- ♦ Assistant of the Oral and Maxillofacial Surgery Service "Dr. Atilio Perdomo", University Hospital "Dr. Ángel Larralde"; Valencia, Edo. Carabobo.
- ♦ Undergraduate Teaching, Subject "Comprehensive Adult Clinic II",
- ♦ Rotation of Oral Surgery, 5th year, School of Dentistry, Carabobo University. Valencia, Edo. Carabobo.

### **Dr. Rivas Zambrano, Aura Lorena**

- ♦ Pediatric Infectious Diseases Specialist
- ♦ Medical School. Carabobo University, Venezuela. Promotion position: 2. Magna Cum Laude
- ♦ Pediatrics Residency at Maracay Hospital Central de Maracay. Carabobo University, Venezuela
- ♦ Pediatric Infectious Diseases Residency at the José Manuel de los Ríos Children's Hospital. Venezuela.
- ♦ Pediatric Infectiologist. Maracay Central Hospital. Venezuela
- ♦ Professor of Pediatric Infectious Diseases. Carabobo University. U Venezuela.
- ♦ Lecturer in National and Regional Congresses and Conferences.

# 04

## Structure and Content

The structure and contents of this complete curriculum have been designed by a team of professionals knowledgeable about the implications of medical training in the approach to the surgical patient, aware of the relevance of current training and committed to quality teaching through new educational technologies. This extensive compendium of contents will be the main asset of the professional when it comes to training in depth in the steps and protocols to follow when performing a surgical intervention with the aim of reconstructing parts of the structure of both lower and hind limbs.





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*This Postgraduate Certificate in Limb Reconstruction includes the most complete and up-to-date scientific program on the market”*

## Module 1. Limb Reconstruction

- 1.1. Truncal Anesthesia
  - 1.1.1. Upper Limb Regional Anesthesia
    - 1.1.1.1. Tightness Above the Elbow
    - 1.1.1.2. Tightness Below the Elbow
  - 1.1.2. Lower Limb Regional Anesthesia
    - 1.1.2.1. Lumbar Square Tightness
      - 1.1.2.1.1. Anterior Lumbar Plexus branch blockade
    - 1.1.2.2. Psoas Compartment Blockades
  - 1.1.3. Complications
- 1.2. Tendon Suturing Techniques
  - 1.2.1. New Proposals
    - 1.2.1.1. Without Grip, with Grip and Lock
    - 1.2.1.2. Internal vs External
    - 1.2.1.3. Peripheral Circumferential
  - 1.2.2. Tendon Retabulation
  - 1.2.3. Tendon Shortening
- 1.3. Upper Limb Flap
  - 1.3.1. Hand Soft Tissue Reconstruction
    - 1.3.1.1. Local and Regional Flaps
      - 1.3.1.1.1. Radial Antebrachial
      - 1.3.1.1.2. Posterior Arterial Interosseous
  - 1.3.2. Forearm, Arm and Elbow Soft Tissue Reconstruction
    - 1.3.2.1. Local and Regional Flaps
      - 1.3.2.1.1. Side of the Arm
      - 1.3.2.1.2. Latissimusdorsi
- 1.4. Upper Limb Free Flap
  - 1.4.1. Forearm Radial
  - 1.4.2. Inguinal
  - 1.4.4. Superficial Inferior Epigastric Artery
  - 1.4.4. Scapula
  - 1.4.5. Anterolateral Thigh
  - 1.4.6. Side of the Arm
- 1.5. Lower Limb Flap
  - 1.5.1. Cutaneous Muscle Flap
  - 1.5.2. Fasciocutaneous-bipediculated Flap
  - 1.5.3. Gastrocnemius Muscle
  - 1.5.4. Soleus Muscle
  - 1.5.5. Reverse Sural Artery
    - 1.5.5.1. Posterior Tibial Artery Perforator
    - 1.5.5.2. From Calcaneal Lateral Artery.
    - 1.5.5.3. From the Medial Plantar Artery
    - 1.5.5.4. Dorsum of the Foot
- 1.6. Lower Limb Free Flap
  - 1.6.1. Rectusabdominus
  - 1.6.2. Musculus gracilis
  - 1.6.3. Latissimusdorsi
  - 1.6.4. Anterolateral thigh
  - 1.6.5. Radial forearm
  - 1.6.6. Risk Factors Associated with Rejection
- 1.7. Replantation of Limbs I
  - 1.7.1. Musculoskeletal Reconstruction of Replantation Limbs
  - 1.7.2. Neural Reconstruction and Recovery in Limb Replantation
  - 1.7.3. Management of Complications After Limb Replantation
  - 1.7.4. Replantation in Children and Teenagers
- 1.8. Limb Replantation II
  - 1.8.1. Thumb Replantation
  - 1.8.2. Finger Replantation
  - 1.8.3. Radiocarpal Joint Replantation
  - 1.8.4. Arm and Forearm Replantation
  - 1.8.5. Lower Limb Replantation

- 1.9. Bone Graft
  - 1.9.1. Autografts
    - 1.9.1.1. Vascularized
    - 1.9.1.2. Non-vascularized
  - 1.9.2. Allografts
  - 1.9.3. Xenografts
  - 1.9.4. Osteoinductive Materials
- 1.10. Post-surgical Rehabilitation of Reconstructive Limb Surgery
  - 1.10.1. Physiotherapy and Hydrotherapy
  - 1.10.2. Use of Lymphatic Drainage and Ultrasound
  - 1.10.3. Hyperbaric Chamber Therapy

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*A unique, key, and decisive training experience to boost your professional development”*



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

This Postgraduate Certificate in Limb Reconstruction guarantees you, in addition to the most rigorous and up-to-date training, access to a certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Limb Reconstruction** includes 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 course of this program does not qualify, in any case, to perform the surgical techniques and procedures described in this syllabus.

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: **Postgraduate Certificate in Limb Reconstruction**

Official N° of Hours: **150 h.**





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



## Postgraduate Certificate Limb Reconstruction

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate Limb Reconstruction

