

# Postgraduate Certificate

Innovation, Research and  
Development in Digestive  
Oncologic Surgery



## Postgraduate Certificate Innovation, Research and Development in Digestive Oncologic Surgery

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/posgraduate-certificate/innovation-research-development-digestive-oncologic-surgery](http://www.techtute.com/us/medicine/posgraduate-certificate/innovation-research-development-digestive-oncologic-surgery)

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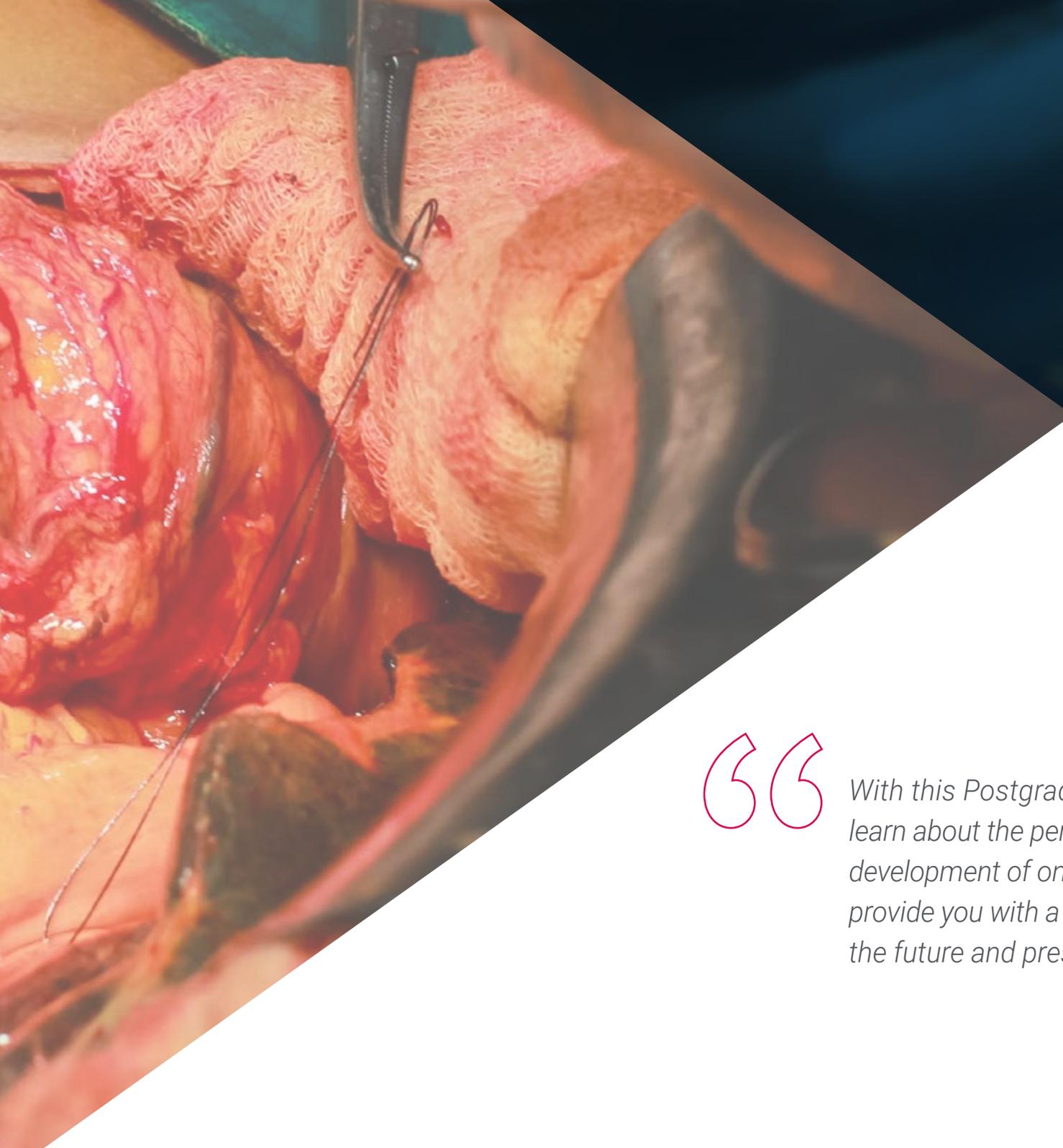
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# 01

# Introduction

Current Oncological Surgery has undergone an exponential development in recent years, driven mainly by the efforts of the medical-scientific community to fight advanced malignant diseases, improving the survival expectations of patients. In this context, the implementation of knowledge in translational or clinical research has become essential. Nowadays, an oncologic surgeon is not conceivable without knowledge of research, methodology, statistics, molecular biology and adjuvant therapies to surgery. Integrating these areas of knowledge will improve the results in patient care and, therefore, their quality of life. For this reason, this 100% online program has been designed, aimed at those medical specialists seeking to advance and update their knowledge in the management of patients with digestive cancer based on the latest scientific evidence.





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*With this Postgraduate Certificate you will learn about the perspectives of innovation and development of oncological surgery, which will provide you with a broad and current vision of the future and present profession"*

Currently, Oncological Surgery has undergone an exponential development thanks to the efforts of surgeons in their daily fight against advanced malignant diseases, which has led to improved survival expectations for patients. Oncologic Surgery not only involves the removal of the tumor, but also the implementation of new adjuvant therapies and the integration of knowledge in translational or clinical research. Thus, it has become essential for oncologic surgeons to have knowledge of research, methodology, statistics, molecular biology and adjuvant therapies to surgery.

In this context, a 100% online program in Innovation, Research and Development in Digestive Oncologic Surgery has been designed for those specialists seeking to advance in the management of patients with digestive cancer. This course addresses innovative aspects in the management of oncological patients, such as basic research, the incorporation of mathematical models, the implementation of new intraoperative technology, new diagnostic analyses based on genomics and therapies directed towards specific targets using immunotherapy and the patient's own immune system. Knowledge of these innovative aspects will improve the outlook in the field of research, diagnosis and treatment of oncology patients, and thus improve the quality of patient care.

In short, the exponential development of Oncological Surgery has allowed the integration of knowledge in translational or clinical research and the implementation of new adjuvant therapies in the management of oncological patients. In this context, the Postgraduate Certificate in Innovation, Research and Development in Digestive Oncologic Surgery is an excellent opportunity for health professionals to acquire knowledge in innovative and advanced aspects in the management of patients with digestive cancer, which will improve the quality of patient care and their survival expectations.

This **Postgraduate Certificate in Innovation, Research and Development in Digestive Oncologic Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Digestive Surgery and Oncology
- ♦ Graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ 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



*You will delve into how navigation systems, 3D models, artificial intelligence and intraoperative virtual reality in the approach to oncologic disease are revolutionizing oncologic surgery"*

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*A program that will provide you with the necessary knowledge to design and initiate research in Oncologic Surgery, as well as the sources of funding and the methodology to apply for research grants”*

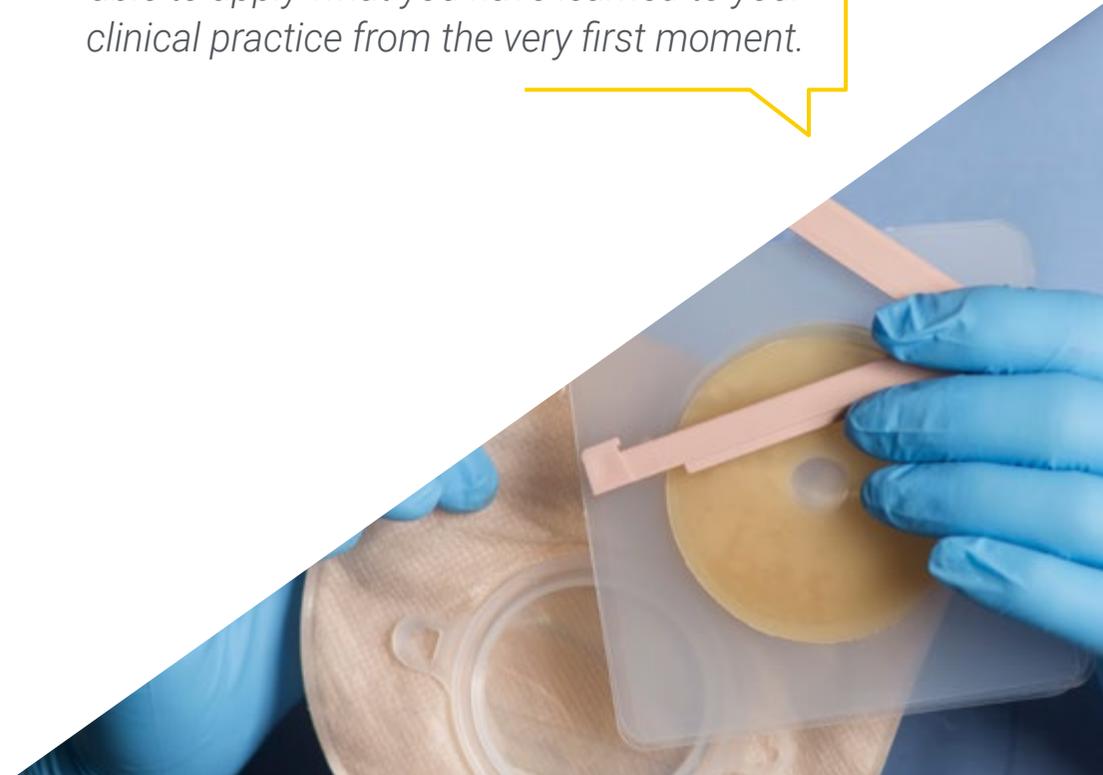
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professionals with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

*This is a 100% online program that delves into the new minimally invasive methods in complex oncological surgery.*

*Thanks to the Relearning methodology, you will obtain a situated, progressive and contextual knowledge, with which you will be able to apply what you have learned to your clinical practice from the very first moment.*



# 02 Objectives

The main objective of the Postgraduate Certificate in Innovation, Research and Development in Digestive Oncologic Surgery is to provide health professionals with advanced and updated knowledge in the management of oncological patients. Among the specific objectives of the course are the incorporation of new technologies and adjuvant therapies, the use of mathematical models and diagnostic analysis based on genomics, as well as the use of therapies directed towards specific targets using immunotherapy and the patient's own immune system. All this in order to improve the outlook in the field of research, diagnosis and treatment of patients with digestive cancer and, consequently, the quality of care for our patients.





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*This program will allow you to incorporate new technologies and adjuvant therapies in the management of oncology patients, which will enable you to provide more up-to-date care based on the latest scientific evidence”*



## General Objectives

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- Deepen the specific knowledge on the management of patients with tumors affecting the digestive system
- Discern the surgical techniques to be used and the new technologies currently available for their diagnosis and treatment
- Know where modern surgery is heading and which are the ways of its development
- Study the fundamentals of research in oncological surgery
- Know the way to develop research projects, how to do it and where to get help
- Develop skills and technical knowledge with which to face any situation presented by a patient in an oncological surgery unit of the digestive system





## Specific Objectives

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- Implement knowledge in basic-translational research, presenting the different strategies in molecular analysis
  - Study the different laboratory research models: animal models, 2D cellular models and 3D organoids
  - Obtain the necessary knowledge to start a clinical research in Oncologic Surgery, how to design a clinical trial and to know the sources of funding and the methodology to apply for research grants
  - Know the use of Big Data and artificial intelligence in research, what information they provide and their validity
  - Understand the different techniques for the application of fluorescence as an aid in Oncologic Digestive Surgery, when to use it and the benefits it can provide
  - Deepen the knowledge of current technological advances and how they can facilitate the surgical technique in Oncologic Digestive Surgery
  - Study navigation systems, 3D models and intraoperative virtual and augmented reality
  - Learn about the new minimally invasive surgical approach techniques, their indications and advantages. Understand the differences between laparoscopy and robotics
  - Learn about the intraoperative ablative and adjuvant techniques that currently exist, how to use them and in which cases, as well as the side effects or complications they may generate
  - Study what liquid biopsy is, how it is performed, what it is used for, how it can be used for diagnosis, prognosis and early detection of recurrences
  - Have knowledge of the new lines of diagnosis, prognosis and treatment in oncology, based on molecular biology, target therapies or immunotherapy
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*This Postgraduate Certificate will meet even your highest expectations thanks to a detailed and comprehensive syllabus"*

# 03

## Course Management

The teachers of the course are experts in the field of Oncologic Surgery and are highly qualified to transmit their knowledge to the students. All of them are leading oncologic surgeons with extensive experience in the care of patients with digestive cancer and in translational or clinical research. In addition, they have publications in high impact scientific journals and have participated in various national and international congresses and events in the field of oncologic surgery. Thanks to the experience and knowledge of these experts, the students of the course will be able to acquire new knowledge and skills to improve the quality of care for their patients.





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*Medical specialists with decades of experience in oncologic surgery will guide and make your learning process more productive”*

## Management



### Dr. Alonso Casado, Oscar

- Chief of Hepatobiliopancreatic Surgery at MD Anderson Cancer Center Madrid Hospital
- Specialist in the General and Digestive Oncology Surgery Service at MD Anderson Cancer Center Madrid, collaborating in the Thoracic Surgery Unit and Plastic Surgery Unit
- Assistant Surgeon at Quirónsalud Sur and El Escorial Hospitals  
Clinical Tutor in Practical Teaching at UFV and MD Anderson Cancer Center Madrid
- Degree in Surgery and Medicine from the UCM
- Certified in Console Surgery of the Da Vinci Xi Robotic System



## Professors

### Dr. Arjona Sánchez, Álvaro

- ◆ Coordinating researcher of the Emerging Research Group "Research in peritoneal and retroperitoneal oncological surgery"
- ◆ Associate Professor in the Department of Medical and Surgical Specialties of the University of Cordoba
- ◆ PhD in Medicine from the University of Córdoba
- ◆ European Board in Oncologic Surgery
- ◆ Member of the European Expert Committee on the treatment of Pseudomyxoma Peritonei

# 04

## Structure and Content

The syllabus of this university program covers a wide variety of current topics in advanced oncologic surgery. It delves into aspects that advance the management of oncologic patients, including basic research, implementation of mathematical models and new intraoperative technology. In addition, new diagnostic analyses based on genomics and therapies directed towards specific targets using immunotherapy and the patient's own immune system are explored. All this will allow students to acquire innovative knowledge in the management of oncology patients.



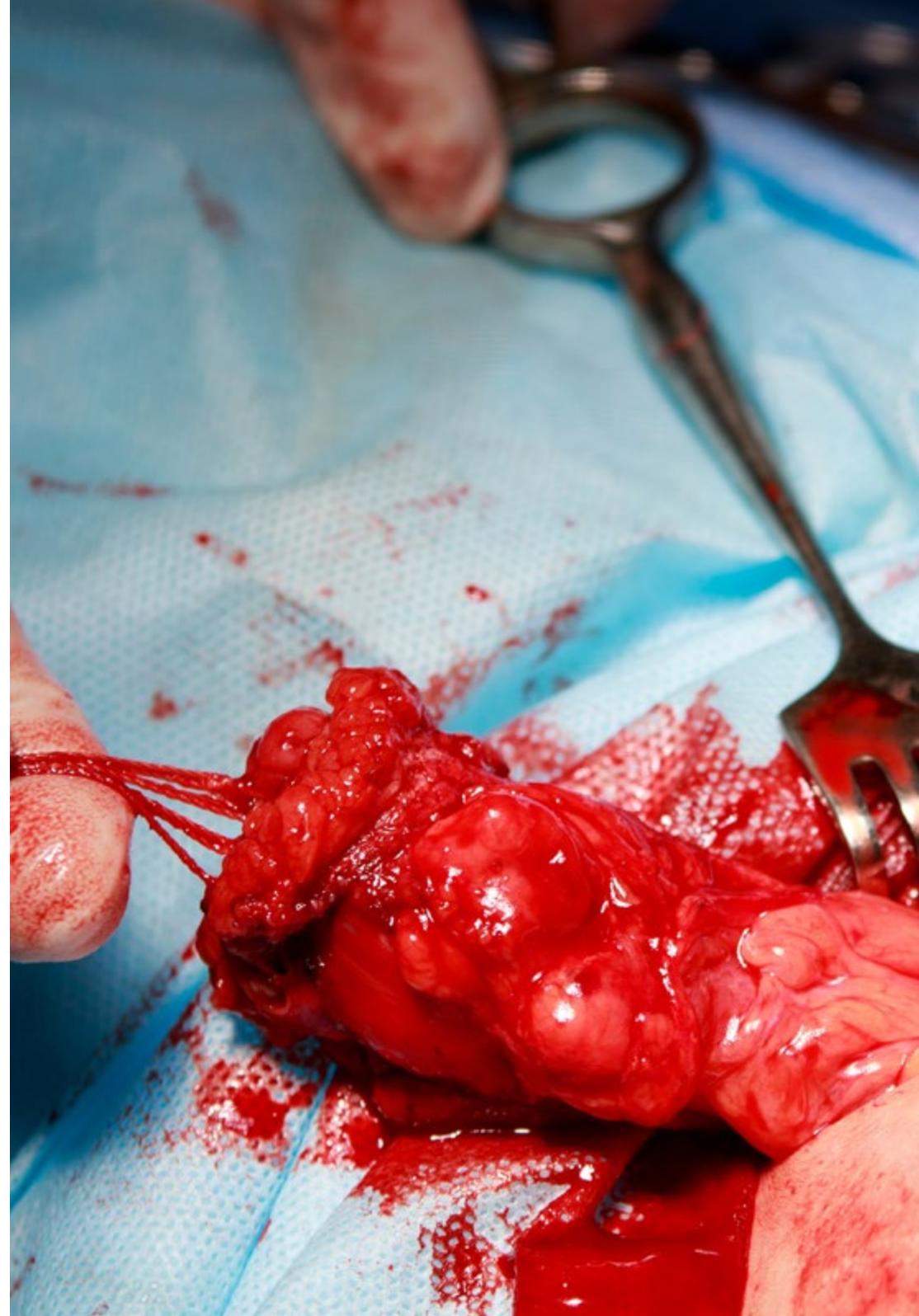


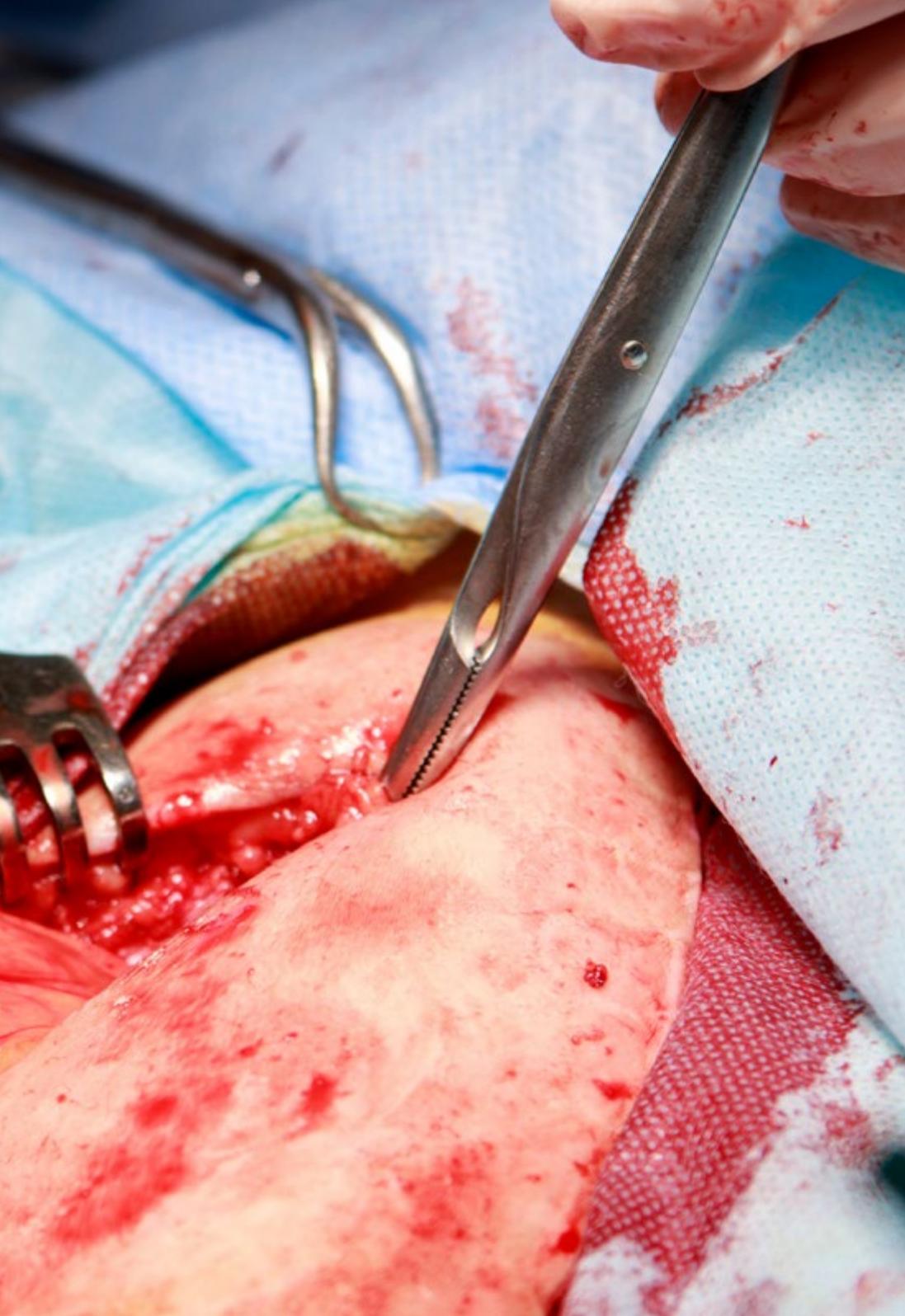
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*With this program you will learn in depth how to use mathematical models and diagnostic analysis based on genomics, which will allow you to make a more accurate, efficient and personalized diagnosis”*

**Module 1.** Innovation, Research and Development in Digestive Oncologic Surgery

- 1.1. Basic research in oncological surgery
  - 1.1.1. Genomic introduction
  - 1.1.2. Introduction to Proteomics
  - 1.1.3. Introduction to Cytometry
- 1.2. Platforms for testing new therapies
  - 1.2.1. Animal Models
  - 1.2.2. 2D cellular models
  - 1.2.3. 3D organoid models
- 1.3. Clinical research in oncologic surgery
  - 1.3.1. Design of clinical trialsDesign of Clinical Trial
  - 1.3.2. Sources of Financing
  - 1.3.3. Introduction to grant application methodology
- 1.4. Big data, artificial intelligence and the use of neural networks in oncology research
  - 1.4.1. Introduction to Big Data
  - 1.4.2. Artificial intelligence in oncological surgery
  - 1.4.3. Use of neural networks in oncologic research
- 1.5. Techniques and applications of fluorescence in advanced oncological surgery
  - 1.5.1. Use of fluorescence in oncologic surgery
  - 1.5.2. Techniques of use, doses, times
  - 1.5.3. Results
- 1.6. Navigation systems, 3D models and intraoperative virtual reality in the approach to oncologic disease
  - 1.6.1. Browsing Systems
  - 1.6.2. Uses and Application of 3D Models
  - 1.6.3. Intraoperative virtual reality
- 1.7. Minimally invasive approach in complex oncologic surgery
  - 1.7.1. Concept of minimally invasive approach and modalities
  - 1.7.2. Description of the different modalities
  - 1.7.3. Robotics





- 1.8. Intraoperative ablative and adjuvant techniques in oncologic surgery
  - 1.8.1. Intraoperative ablation techniques: mechanism of action
  - 1.8.2. Differences, Advantages, and Disadvantages
  - 1.8.3. Intraoperative radiotherapy
- 1.9. Liquid biopsy and circulating DNA as diagnostic and prognostic methods in advanced neoplastic disease
  - 1.9.1. What is liquid biopsy?
  - 1.9.2. How is a Fluid Biopsy Done?
  - 1.9.3. Applications of Liquid Biopsy
- 1.10. New lines of oncological treatment
  - 1.10.1. *Target therapy* in digestive oncology and sarcomas
  - 1.10.2. Immunotherapy in digestive tumors
  - 1.10.3. CAR-T therapy

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*The course is taught online, which will allow you to access the contents at any time and from anywhere, adapting to your schedules and needs"*

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 Innovation, Research and Development in Digestive Oncologic Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Innovation, Research and Development in Digestive Oncologic Surgery** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Innovation, Research and Development in Digestive Oncologic Surgery**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University 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  
development languages  
virtual classroom



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