

# Postgraduate Certificate

## Radiation Oncology Applied to Ocular Oncology





## Postgraduate Certificate Radiation Oncology Applied to Ocular Oncology

- » 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/postgraduate-certificate/radiation-oncology-applied-ocular-oncology](http://www.techtute.com/us/medicine/postgraduate-certificate/radiation-oncology-applied-ocular-oncology)

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# 01

# Introduction

Radiation Oncology Applied to Ocular Oncology is a medical discipline that deals with the diagnosis and treatment of tumors affecting the eye and its adjacent structures using ionizing radiation. Due to the complexity and specificity of this area, there is a growing need for highly trained professionals in this medical section. Taking into account this context, TECH has developed a Postgraduate Certificate that comprehensively addresses the most relevant aspects of this discipline. The program consists of a complete module on Radiation Oncology Applied to Ocular Oncology, is taught entirely online and uses a pedagogical methodology based on *Relearning*, which replaces traditional teaching with innovative tools to foster collaborative learning.







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*Update your knowledge in tumor radiobiology thanks to this Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology, where you will learn the molecular mechanisms of biological radiation injury and the "5 R's" of radiation therapy"*

Nowadays, ocular cancer is an increasingly frequent disease and its treatment requires a multidisciplinary approach. Radiotherapy is one of the most widely used therapeutic options in the treatment of ocular cancer, so it is important to have professionals trained in this area. Lack of knowledge about the basics of radiotherapy and the application of specialized techniques can put patients' visual health at risk.

Taking into account this context, TECH has designed a Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology proposed to provide health professionals with a complete and updated training on the subject. Participants will learn about radiobiology and the molecular mechanisms of biological radiation injury, as well as the "5 R's" of radiotherapy. In addition, they will study radiophysics, the magnitudes and units of measurement, the interaction of radiation with matter and treatment design. Topics related to radiation protection and the corresponding regulations and legislation will also be addressed.

The program is taught by experts in the area of Radiation Oncology Applied to Ocular Oncology and is carried out through a theoretical-practical methodology. Thus, TECH uses its innovative *Relearning* method, to guarantee learning without the need to memorize. In addition, the program uses state-of-the-art teaching resources and materials such as case studies, so that students can apply the knowledge acquired in real situations.

This **Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology** 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 medical experts focused on Radiation Oncology Applied to Ocular 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 the self-assessment process can be carried out 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



*With this qualification you will be able to apply radiotherapy in the treatment of various ocular pathologies related to cancer, which will result in an improvement in the quality of life of patients"*

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*This Postgraduate Certificate is designed for health professionals who wish to broaden their knowledge in Radiation Oncology, including ophthalmologists, radiation therapists and oncologists”*

The program's teaching staff includes professionals from the sector who bring to this training the experience of their work, as well as recognized specialists from prestigious reference societies and 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.

*Through the didactic resources that TECH has prepared especially for this program, you will be able to expand your knowledge easily and quickly.*

*This Postgraduate Certificate is a unique opportunity for those health professionals seeking to improve their performance in clinical practice and provide better treatment to their patients.*



# 02 Objectives

The main objective of this Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology is to equip students in scientific research in the field of health, providing them with the necessary tools to interpret scientific methodology and establish the principles of evidence-based medicine. In addition, it seeks to develop skills to examine and disseminate scientific results in an ethical and legal manner. In this way, the students will have the possibility to broaden their knowledge in this area and to update comprehensively on the characteristics of this field.







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*Students will learn to examine the methodology of clinical trials and to interpret the results of scientific research, in order to apply them in the diagnosis, treatment and follow-up of patients with ocular cancer”*



## General Objectives

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- ♦ Update knowledge on the different tumors that can affect the eye and its appendages
- ♦ Deepen in the diagnostic-therapeutic approach of ocular neoplasms
- ♦ Delve into the main common characteristics of ocular neoplasms
- ♦ Deepen in the different tumor lesions that can affect the eyelids, the lacrimal drainage pathway and the orbit
- ♦ Investigate the different types of tumors that can be located on the ocular surface, cornea and conjunctiva
- ♦ Delve into the most recent research in Oncological Ophthalmology



*Become an expert in Ocular Oncology with this Postgraduate Certificate and obtain the most advanced knowledge for the diagnosis, treatment and follow-up of patients with ocular oncologic disease"*





## Specific Objectives

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- ◆ Provide the most advanced knowledge for the diagnosis, treatment and follow-up of patients with ocular oncologic disease
- ◆ Deepen in the methodology of clinical and pathological classification of ocular tumor pathology
- ◆ Update knowledge in the area of tumor radiobiology
- ◆ Delve into the types of radiation beams used for the treatment of ocular pathology
- ◆ Deepen in the principles for the simulation and design of radiotherapy treatments
- ◆ Investigate the principles of radiation protection applied to radiotherapy treatments



03

# Course Management

TECH recognizes the importance of having highly qualified teachers to teach a Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology. For this reason, it has selected the best professionals in this field, who have extensive academic and professional experience. In addition, these teachers have a multidisciplinary training that allows them to provide students with a broader and more complete vision of the subject. With this selection of professionals, TECH guarantees a quality and updated education in Radiation Oncology Applied to Ocular Oncology, which will allow students to acquire the necessary skills for their professional performance in the field.





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*Do you want to delve into the clinical and pathological classification of ocular tumor pathology? This Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology will provide you with the methodology to do so”*

## International Guest Director

Dr. Arun Singh is a true international eminence in Ophthalmic Oncology, a field to which he has dedicated more than three decades of his professional career. His career has been focused on research and treatment of eyelid and conjunctival tumors. He has also delved into pathologies such as Retinoblastoma and Uveal Melanoma.

For his exceptional clinical career, this expert has been recognized by both the Royal College of Ophthalmologists in the United Kingdom and the American Board of Ophthalmology in the United States. In addition, he has received a Career Achievement Award. These distinctions, which underline his excellence, are also endorsed by his prolific scientific work, with more than 160 articles in journals of high academic impact.

Another of his important contributions to this medical specialty has been the book Clinical Ophthalmic Oncology, considered an essential reference text for experts and professionals in training. His work as Editor of the prestigious British Journal of Ophthalmology is also noteworthy.

His excellent healthcare praxis has allowed him to take on challenges such as leading the Department of Ophthalmic Oncology at the Cleveland Clinic in Ohio, USA. From that position he has dedicated extensive efforts to the study of other ocular pathologies and, in turn, collaborates with the Pediatric Program of Uncommon Cancers and Blood Diseases.

As for his training, Dr. Singh began his medical education in India, at the Jawaharlal Institute and Mandras University. Subsequently, he developed internships and fellowships at the University of Florida, as well as completed his internship at St. Luke's Hospital in Bethlehem. He completed his specialization in Ocular Oncology at Wills Eye Hospital in Philadelphia. He has also been linked to highly reputable international organizations such as the Association for Research in Vision and Ophthalmology.



## Dr. Singh, Arun

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- Director, Department of Ophthalmic Oncology, Cleveland Clinic, Ohio, USA
- Editor of the British Journal of Ophthalmology
- Editor of the academic book Clinical Ophthalmic Oncology
- Specialist in Ophthalmology from the University of Florida
- Internships at Watford General and St. Luke's Hospitals, Watford, Florida
- Graduate of Medicine and Surgery from the Jawaharlal Institute and the University of Madras
- Member of: International Association for Research in Vision and Ophthalmology, International Society of Ocular Oncology, American Academy of Ophthalmology, Royal College of Ophthalmologists of London, UK, Royal College of Surgeons of Edinburgh, UK



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

## Management



### Dr. Garrido Hermosilla, Antonio Manuel

- Medical Specialist in Ophthalmology
- Specialist in the Ophthalmology Service of the Virgen Macarena University Hospital
- Specialist in Oculoplasty-Orbit and Ocular Oncology Units
- Specialist in National Reference Units (CSUR) for Adult and Childhood Intraocular Tumors
- Co-coordinator of Andalusian Reference Units (UPRA) for the Integral Management of the Anophthalmic Cavity and for Graves' Orbitopathy
- Tutor for Ophthalmology Interns



### Dr. Relimpio López, María Isabel

- Coordinator of the Adult Intraocular Tumors Unit at the CSUR of the Hospital Virgen Macarena
- Specialist Area Physician (FEA) in the Ophthalmology Service at the University Hospital Virgen Macarena (HUVVM)
- Specialist in the Retina and Ocular Oncology Units of the HUVVM
- Coordinator of the National Reference Unit (CSUR) for Adult Intraocular Tumors
- Specialist in the National Reference Unit (CSUR) for Childhood Intraocular Tumors
- Ophthalmologist in the European Network ERN-PaedCan for Retinoblastoma
- PhD in Medicine, University of Seville
- Clinical Tutor of Ophthalmology, Medical Degree, University of Seville



## Professors

### Dr. Carrasco Peña, Francisco de Asís

- ♦ Section Chief at the Oncology Department of the Virgen Macarena University Hospital
- ♦ Collaborator of the National Reference Unit for Adult Intraocular Tumors
- ♦ PhD in Medicine, University of Seville

### Dr. Saavedra Bejarano, Jonathan

- ♦ Radiation Oncologist at the Virgen Macarena University Hospital
- ♦ Collaborator of the National Reference Unit for Adult Intraocular Tumors
- ♦ PhD in Medicine, University of Seville

### Dr. Míguez Sánchez, Carlos

- ♦ Head of the Radiation Oncology Department of the Virgen Macarena University Hospital
- ♦ Medical Director of the Clinical Management Unit of the Virgen Macarena University Hospital
- ♦ Collaborator of the National Reference Unit for Adult Intraocular Tumors
- ♦ Radiation Oncologist at the Virgen Macarena University Hospital
- ♦ PhD in Medicine, University of Seville

### D. Baeza Monedero, Carlos Juan

- ♦ Specialist in the Hospital Radiophysics Service of the Virgen Macarena University Hospital
- ♦ Specialist in the Hospitalary Radiophysics Service of the Virgen del Rocío University Hospital
- ♦ Collaborator of the National Reference Unit for Adult Intraocular Tumors
- ♦ Graduate in Physical Sciences from the Complutense University of Madrid

### D. Gallego Castro, Mario

- ♦ Specialist in Hospital Radiophysics Service of the Virgen Macarena University Hospital (HUVH)
- ♦ Collaborator of the National Reference Unit (CSUR) for Adult Intraocular Tumors
- ♦ Graduate in Physical Sciences from the University of Granada

# 04

## Structure and Content

The contents that are part of the academic syllabus of this Postgraduate Certificate have been prepared by the best experts in this area, with the aim of giving the students a global and updated vision of the application of radiotherapy in the treatment of the most frequent ocular pathologies. The topics of the program are divided into different items that address the fundamental aspects of radiobiology and radiophysics, as well as special techniques for the treatment, diagnosis and follow-up of different ocular pathologies such as uveal melanoma, ocular lymphoma, retinoblastoma and ocular metastases. The program is taught in 100% online mode, using the *Relearning* pedagogical methodology and providing great flexibility in the organization of academic resources, allowing students to adapt their study pace to their needs.





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*This program is highly flexible and adaptable, allowing students to access online academic resources from anywhere, anytime”*



## Module 1. Radiation Oncology Applied to Ocular Oncology

- 1.1. Radiobiology
  - 1.1.1. Biological Radiation Injury
  - 1.1.2. Molecular Mechanisms
  - 1.1.3. The "5 R's" of Radiotherapy
- 1.2. Radiophysics I
  - 1.2.1. Magnitudes and Units of Measurement
  - 1.2.2. Interaction of Radiation with Matter
  - 1.2.3. External Radiotherapy Beams and Encapsulated Sources
- 1.3. Radiophysics II
  - 1.3.1. Dosimetry of Beams and Sources: Quality Control
  - 1.3.2. Treatment Design
  - 1.3.3. Treatment Volumes and Organs at Risk
- 1.4. Radiophysics III
  - 1.4.1. Radiation Protection: General Principles
  - 1.4.2. Regulations and Legislation
  - 1.4.3. Operational Radiation Protection
- 1.5. Special Treatment Techniques: Brachytherapy
  - 1.5.1. Fundamentals
  - 1.5.2. Methodology
  - 1.5.3. General Treatment Indications
- 1.6. Uveal Melanoma
  - 1.6.1. Diagnosis
  - 1.6.2. Treatment
  - 1.6.3. Monitoring
- 1.7. Ocular Lymphoma
  - 1.7.1. Diagnosis
  - 1.7.2. Treatment
  - 1.7.3. Monitoring





- 1.8. Retinoblastoma
  - 1.8.1. Diagnosis
  - 1.8.2. Treatment
  - 1.8.3. Monitoring
- 1.9. Ocular Metastases
  - 1.9.1. General Aspects
  - 1.9.2. Breast Cancer
  - 1.9.3. Lung Cancer
- 1.10. Benign Pathology
  - 1.10.1. Local Therapies: general
  - 1.10.2. Thyroid Ophthalmopathy or Graves' Orbitopathy
  - 1.10.3. Hemangiomas

“*Unhurried, calm and immersed in this program. This is the way you will be able to keep up to date with the latest developments in this area because you will study at your own pace*”

# 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. Gervas, 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

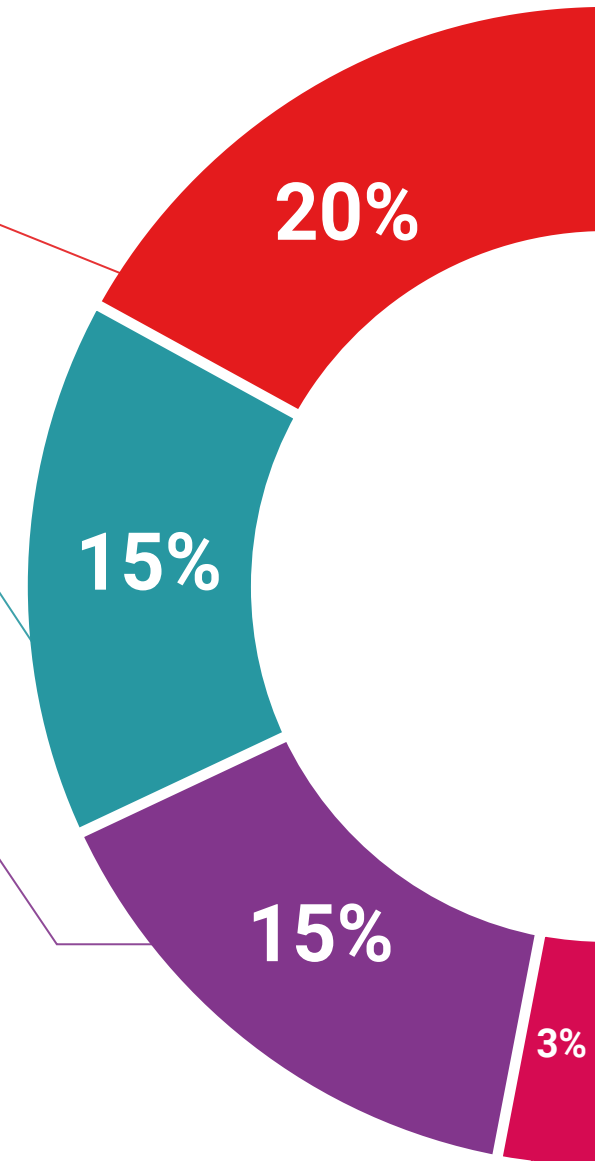
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.







# 06 Certificate

The Postgraduate Certificate in Radiation Oncology Applied to Ocular Oncology 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 Radiation Oncology Applied to Ocular Oncology** 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 Radiation Oncology Applied to Ocular Oncology**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**







**Postgraduate Certificate**  
Radiation Oncology Applied  
to Ocular Oncology

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