

# Internship Program

## Genomic and Precision Medicine in Hematology: Thrombosis

A photograph of a laboratory setting. In the foreground, a white pipette is positioned vertically. Behind it, a rack holds several test tubes with blue caps. The test tubes have labels that include 'VENOCLIFE' and '4 ml'. The background is a blurred laboratory environment. The image is overlaid with a blue and white geometric design.

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Internship Program  
Genomic and Precision Medicine  
in Hematology: Thrombosis

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# 01 Introduction

Early detection of venous thrombosis is essential to treat this disease and reduce the sequelae it may cause. Therefore, the constant updating of specialists in Genomic and Precision Medicine in Hematology acquires great relevance, since it allows the adoption of more efficient preventive measures or the establishment of the best therapies for these pathologies. For this reason, TECH has created this program, aimed at providing the physician with the latest advances in this field in an exclusively practical way. For 3 weeks, you will be admitted to a prestigious hospital center where, integrated in a first class team, you will assimilate the most advanced techniques and procedures in this medical field in order to promote the well-being of your patients.



*You will manage, through this program, the updated predictive models that allow to reduce the risk of suffering Venous Thromboembolic Disease in the oncologic patient"*





Venous thromboembolic disease, although preventable and treatable, continues to cause a high number of deaths today. In fact, it is the third leading cause of cardiovascular death after acute myocardial infarction and stroke. In order to treat patients safely and preserve their lives, specialists in Genomic and Precision Medicine in Hematology are obliged to constantly expand their capabilities, applying all scientific innovations in their work methods. For this reason, TECH has opted to design this academic program, with the aim of placing the expert at the forefront of this sector in a short period of time.

During 3 intensive weeks, the physician will have access to a hospital internship in a highly prestigious center, where they will apply the most up-to-date diagnostic and therapeutic techniques in Genomic and Precision Medicine in Hematology. Surrounded by the best specialists in this field and fully integrated in a multidisciplinary work team, you will manage the new predictive models to prevent the risk of thrombosis in oncology patients or master the modern treatments for Venous Thromboembolic Disease, among other issues.

In order to promote an exhaustive learning process adapted to their professional needs, students will be accompanied throughout their internship by a tutor specifically designated for them, who will be in charge of resolving their health concerns and guiding them towards excellence in this field of medicine. Therefore, this is a unique opportunity to improve your medical competencies with the best experts and in a real environment, which guarantees the applicability of all the skills acquired in this program in your daily practice.

# 02

## Why Study an Internship Program?

In the field of medicine, it is strictly necessary to properly apply new procedures and updated diagnostic and therapeutic techniques in order to obtain a relevant professional growth and provide a quality service to the patient. For this reason, TECH has created this program, which will allow the physician to learn all the advances in Genomic and Precision Medicine in Hematology in an exclusively practical way. During 3 weeks, you will have access to a first level hospital, surrounded by the best experts in this field, to learn the latest preventive methods in these pathologies and adopt them in your daily work.



*Do you want to update your skills in Genomic and Precision Medicine in Hematology in a practical way and in a short time? TECH offers you that opportunity by enrolling in this program!"*

### 1. Updating from the Latest Technology Available

Genomic and Precision Medicine in Hematology has undergone a notable modification in recent years due to the appearance of updated preventive, diagnostic and treatment methods that avoid or minimize the risk of thrombosis. Because of this, TECH has created this program, so that the doctor can acquire all these advances in a real working environment and in a practical way to enhance their daily practice.

### 2. Gaining In-depth Knowledge from the Experience of Top Specialists

In this practical experience, the student will be accompanied by a team of professionals who guarantee the immense quality of the program. Therefore, supervised at all times by a specific tutor, you will observe and act with real patients together with the best experts in Genomic and Precision Medicine in Hematology, acquiring updated skills that will be useful in your professional life.

### 3. Entering First-Class Clinical Environments

TECH carefully selects all available centers for Internship Programs. Thanks to this, the specialist will have guaranteed access to a prestigious clinical environment in the field of Genomic and Precision Medicine in Hematology. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.



#### 4. Putting the acquired knowledge into daily practice from the very first moment

In the academic market, there are a large number of programs that focus on offering didactic content with little real applicability. Given this circumstance, TECH has opted to design this 100% practical learning model, which will integrate the student for 3 weeks in a prestigious hospital to apply the innovative diagnostic and therapeutic methods in this medical area from the very beginning.

#### 5. Expanding the Boundaries of Knowledge

TECH offers the possibility of carrying out this Internship Program in centers of international importance. This way, the specialist will be able to expand their frontiers and catch up with the best professionals, who practice in first class centers and in different continents. A unique opportunity that only TECH could offer to its students.



*You will have full practical immersion  
at the center of your choice"*

# 03 Objectives

The objective of this program is for the specialist to update diagnostic and therapeutic procedures in Genomic and Precision Medicine in Hematology in an exclusively practical way, through an internship designed with clinical and academic rigor, under the guidance of renowned professionals, in a center of the highest scientific quality and technological innovation.



## General Objectives

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- Expand the physician's skills in the approach to Venous Thromboembolic Disease
- Acquire advanced skills in the field of data omics and bioinformatics methods applied to Precision Medicine
- Apply the latest updates in the treatment of this disease in daily practice with affected patients





## Specific Objectives

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- ♦ Explain the concept of feedback in homeostatic balance and its application
- ♦ Correlating coagulation tests with the phases of coagulation to understand which fundamental physiological process is failing in primary or secondary hemostasis
- ♦ Explain the pathological mechanisms by which a thrombus develops in the veins and the short- and long-term consequences it may have
- ♦ Analyze the relations of thrombus and recurrence with determinant variables such as age, sex or race
- ♦ Analyze how the circumstances associated with the thromboembolic event determine, to a large extent, the risk of recurrence
- ♦ Describe the environmental risk factors that are associated with the disease and the genetic basis known at present
- ♦ Learn how to diagnose Venous Thromboembolism
- ♦ Know the main treatments for this disease
- ♦ Learn about venous thrombosis prevention measures
- ♦ Know the specific characteristics of patients with thrombosis in the oncologic setting
- ♦ Recognize the preventive measures for oncology patients according to their characteristics, whether they are in-patients, surgical patients or patients undergoing systemic therapy in an outpatient setting
- ♦ Identify the preventive models in case of thrombosis risk
- ♦ Learn the most effective treatments for cancer-associated thrombosis
- ♦ Relate birth control and hormonal methods to venous thrombosis
- ♦ Implement preventive strategies for non-pregnant women of childbearing age
- ♦ Establish the relationship between venous thrombosis and management or cesarean section
- ♦ Recognize the medication used during pregnancy, puerperium and lactation
- ♦ Obtain notions of basic Unix/Linux administration
- ♦ File and directory management using the Unix/Linux command interpreter
- ♦ Learn the programming language R and how to manage its packages
- ♦ Recognize the different types of data in R and know which to use in each Cases
- ♦ Implement your own functions in R to perform specific tasks
- ♦ Provide an overview of genetics, and in particular of genome-wide association studies
- ♦ Delve into the current status of the use of genetics in Venous Thromboembolic Disease
- ♦ Identify DNA sequencing techniques
- ♦ Acquire knowledge of bioinformatic analysis of NGS data
- ♦ Interpret NGS results in thrombosis and hemostasis
- ♦ Know the experimental designs and quality control for RNA-seq studies
- ♦ Implement preprocessing steps for a new dataset
- ♦ Optimize linear regression models with the lowest possible number of variables
- ♦ Use different methods for validating the performance of a predictive model
- ♦ Adjust support vector machines to clinical data and assess their performance
- ♦ Manage various unsupervised learning methods for exploratory data analysis

# 04 Educational Plan

This program has a practical phase that will take place in a prestigious hospital, lasting 3 weeks from Monday to Friday, with 8 consecutive hours of practical learning with an attending specialist. This internship will allow the student to observe and work with real patients alongside a team of reference professionals in the area of Genomic and Precision Medicine in Hematology, applying the most innovative preventive, diagnostic and therapeutic procedures for each case.

In this completely practical Internship Program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare in areas and conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

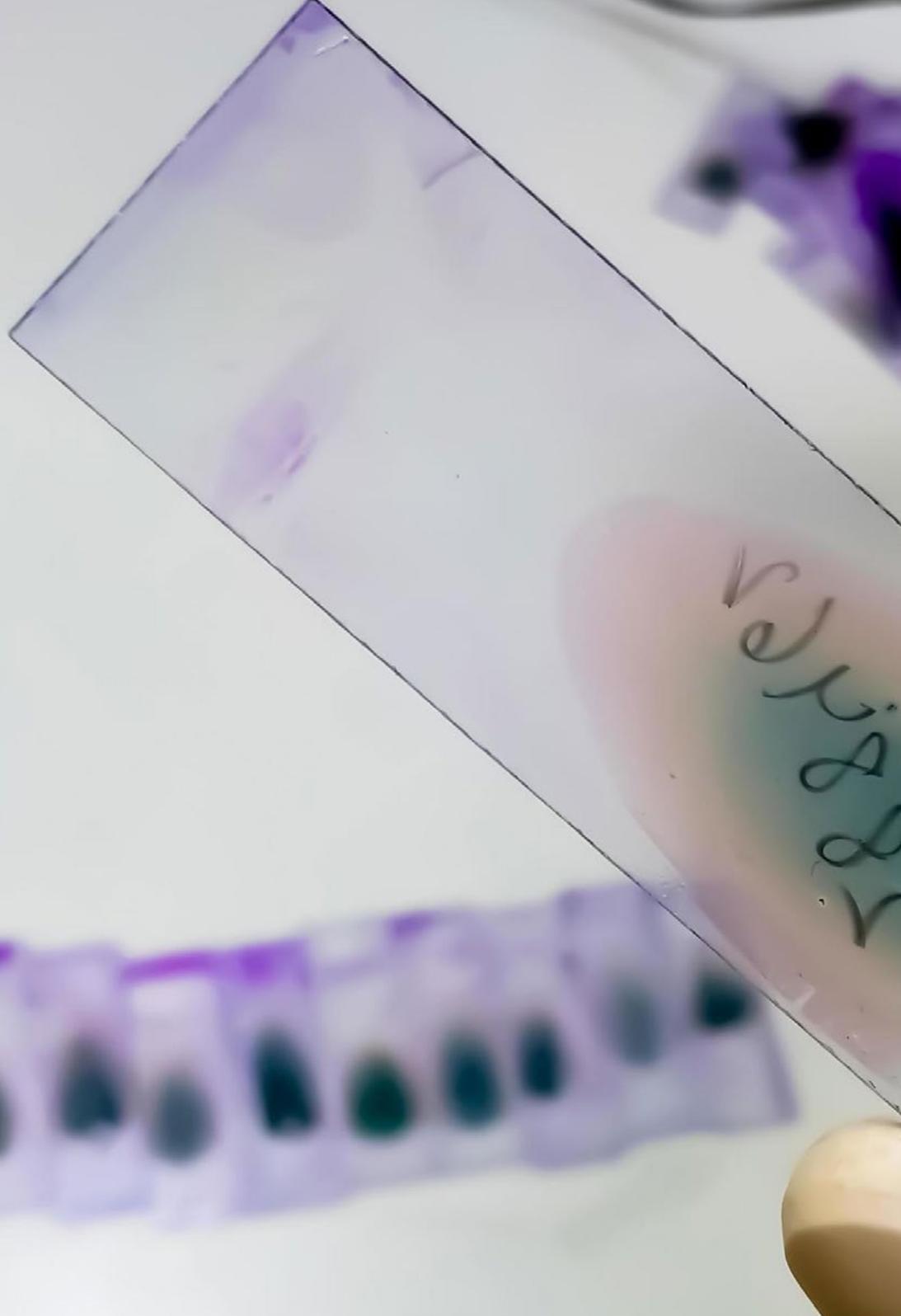
It is, without a doubt, an opportunity to learn by working in the innovative hospital of the future, where the use of updated diagnostic techniques and updated treatments for Venous Thromboembolic Diseases are essential to ensure the integrity of patients. This is a new way of understanding and integrating healthcare processes, and makes the hospital the ideal teaching environment for this innovative experience in the improvement of professional healthcare competencies for the 21st century.

The practical teaching will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for medical practice (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:



*Receive specialized education in an institution that can offer you all these possibilities, with an innovative academic program and a human team that will help you develop your full potential"*



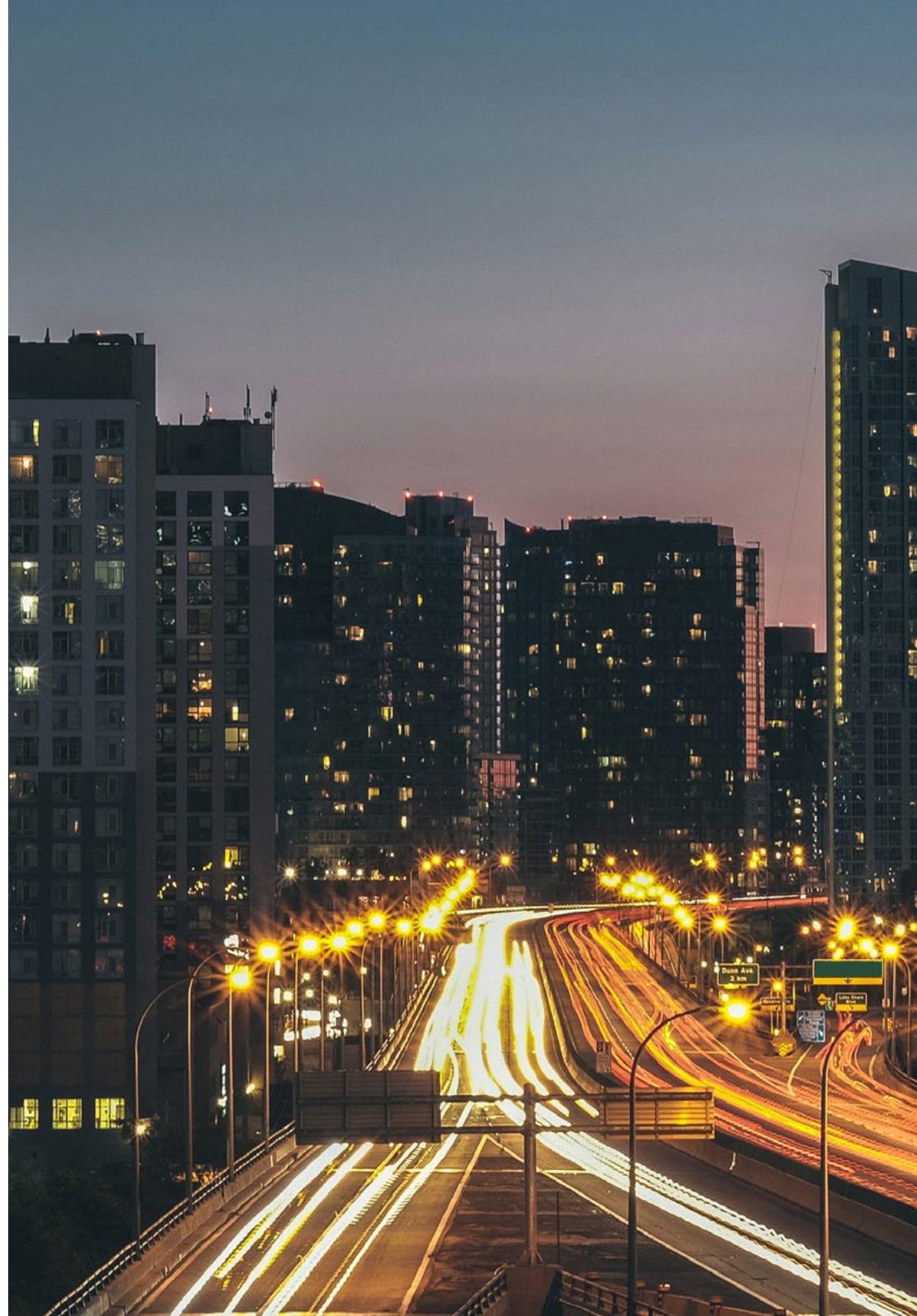
Module	Practical Activity
<b>Diagnosis, Treatment and Prophylaxis in Venous Thromboembolism</b>	Diagnosis of VTE
	Provide VTE treatment according to the needs and extent of each patient's pathology
	Develop VTE prophylaxis
<b>Special Situations: Thrombosis in women and in the oncological setting</b>	Prevent Venous Thromboembolic Disease in women of childbearing age who are not pregnant through the implementation of various strategies
	Diagnose and treat Venous Thromboembolic Disease during gestation and puerperium and puerperium
	Use predictive models of thrombosis risk to prevent disease in the oncology setting
<b>Omics Data: Introduction to R programming language</b>	Performing file and system management on UNIX/Linux
	Manage data using the R programming language
	Create a graphical representation of the data obtained in R
<b>Thrombosis in the Genomic Age: Global genome and massive sequencing studies</b>	Proper interpretation of the results obtained in the GWAS
	Perform genetic analysis of Venous Thromboembolic Disease
	Employ various DNA sequencing techniques to enhance the diagnosis of venous thromboembolic disease of Venous Thromboembolic Disease

# 05 Where Can I Do the Internship Program?

Thanks to TECH's objective of providing its students with an excellent learning experience, they will be able to carry out their internships in various prestigious international centers. During these 3 weeks, you will be integrated into a work team made up of the best experts in Genomic and Precision Medicine in Hematology, who will provide you with numerous skills that will favor your professional growth.



*Take your Internship in a prestigious hospital center and improve your skills with the best professionals in this field of medicine"*





The student will be able to do this program at the following centers:



Medicine

### Hospital HM Modelo

Country City  
Spain La Coruña

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine

### Hospital HM Rosaleda

Country City  
Spain La Coruña

Address: Rúa de Santiago León de Caracas, 1, 15701, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Hair Transplantation
- Orthodontics and Dentofacial Orthopedics



Medicine

### Hospital HM La Esperanza

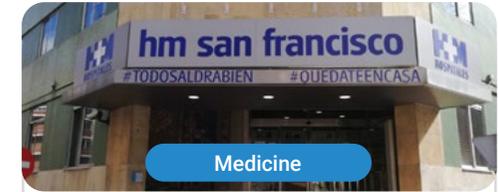
Country City  
Spain La Coruña

Address: Av. das Burgas, 2, 15705, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Oncology Nursing
- Clinical Ophthalmology



Medicine

### Hospital HM San Francisco

Country City  
Spain León

Address: C. Marqueses de San Isidro, 11, 24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department



Medicine

### Hospital HM Regla

Country City  
Spain León

Address: Calle Cardenal Landázuri, 2, 24003, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update on Psychiatric Treatment in Minor Patients



Medicine

### Hospital HM Nou Delfos

Country City  
Spain Barcelona

Address: Avinguda de Vallcarca, 151, 08023 Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Medicine

### Hospital HM Madrid

Country City  
Spain Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Palliative Care
- Anaesthesiology and Resuscitation



Medicine

### Hospital HM Montepríncipe

Country: Spain  
City: Madrid

Address: Av. de Montepríncipe, 25, 28660, Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Palliative Care
- Aesthetic Medicine



Medicine

### Hospital HM Torrelodones

Country: Spain  
City: Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine

### Hospital HM Nuevo Belén

Country: Spain  
City: Madrid

Address: Calle José Silva, 7, 28043, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- General and Digestive System Surgery
- Clinical Nutrition in Medicine



Medicine

### Hospital HM Puerta del Sur

Country: Spain  
City: Madrid

Address: Av. Carlos V, 70, 28938, Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Palliative Care
- Clinical Ophthalmology



Medicine

### HM CIOCC - Centro Integral Oncológico Clara Campal

Country: Spain  
City: Madrid

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Gynecologic Oncology
- Clinical Ophthalmology



Medicine

### HM CIOCC Barcelona

Country: Spain  
City: Barcelona

Address: Avenida de Vallcarca, 151, 08023, Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout the country. Spanish geography

**Related internship programs:**

- Advances in Hematology and Hemotherapy
- Oncology Nursing



Medicine

### HM CIOCC Galicia

Country: Spain  
City: La Coruña

Address: Avenida das Burgas, 2, 15705, Santiago de Compostela

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Gynecologic Oncology
- Clinical Ophthalmology



### Policlínico HM Cruz Verde

Country	City
Spain	Madrid

Address: Plaza de la Cruz Verde, 1-3, 28807, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Advanced Clinical Podiatry  
- Optical Technologies and Clinical Optometry



### Policlínico HM Arapiles

Country	City
Spain	Madrid

Address: C. de Arapiles, 8, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Anaesthesiology and Resuscitation  
- Pediatric Dentistry



### Policlínico HM Rosaleda Lalín

Country	City
Spain	Pontevedra

Address: Av. Buenos Aires, 102, 36500, Lalín, Pontevedra

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**  
- Advances in Hematology and Hemotherapy  
- Neurological Physiotherapy

# 06

## General Conditions

### Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Internship Program, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor, whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the students does not show up on the start date of the Internship Program, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Internship Program will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** The Internship Program shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Internship Program. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Internship Program will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

# 07 Certificate

This **Internship Program in Genomic and Precision Medicine in Hematology: Thrombosis** contains the most complete and up-to-date program in the professional and academic landscape.

After the student has passed the assessments, they will receive their corresponding Internship Program diploma issued by TECH Technological University via tracked delivery\*.

The diploma issued by TECH will reflect the grade obtained in the test.

Title: **Internship Program in Genomic and Precision Medicine in Hematology: Thrombosis**

Duration: **3 weeks**

Attendance: **Monday to Friday, 8-hour consecutive shifts**

Total Hours: **120 h. of professional practice**

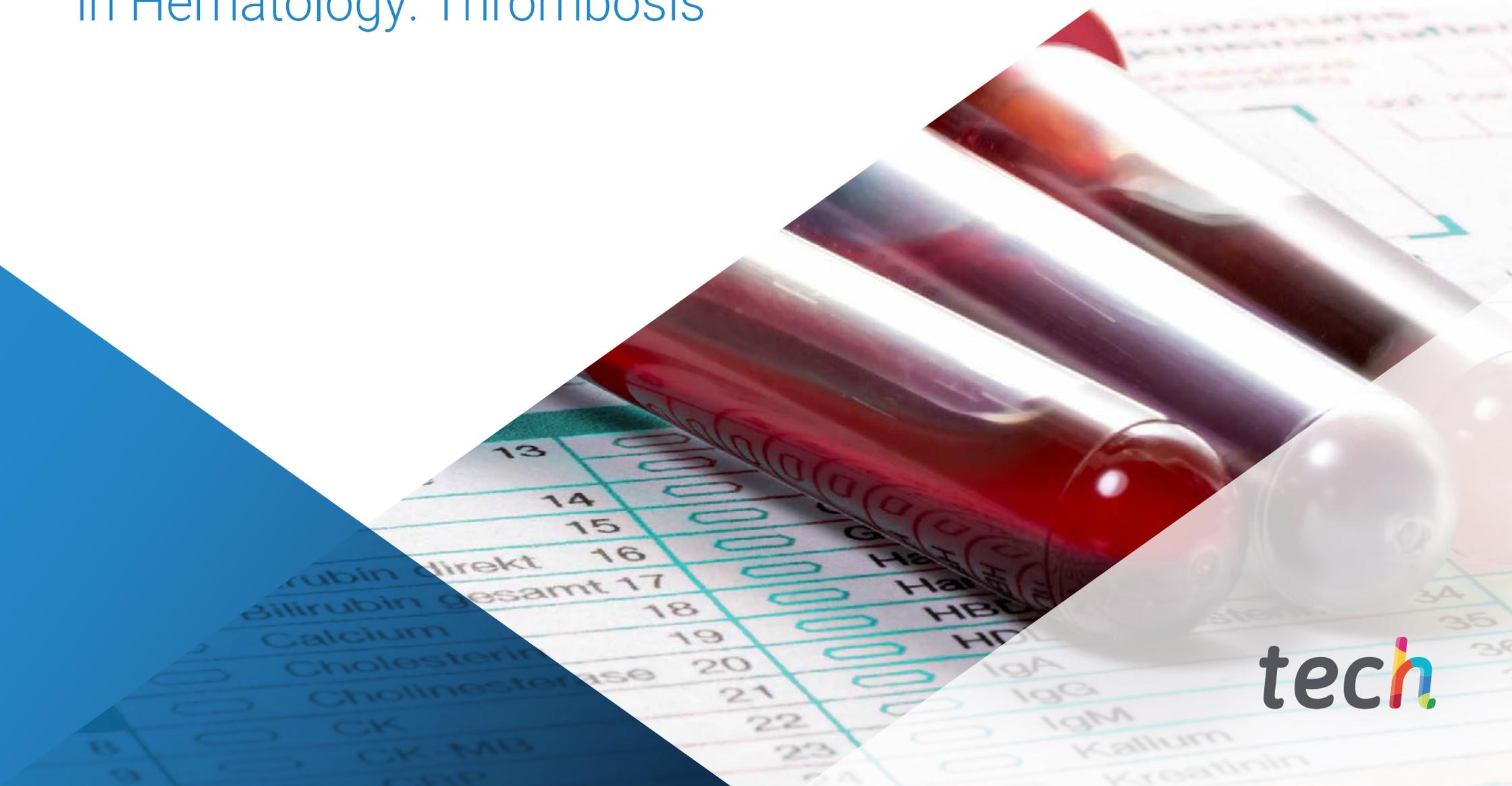




Internship Program  
Genomic and Precision Medicine  
in Hematology: Thrombosis

# Internship Program

## Genomic and Precision Medicine in Hematology: Thrombosis



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