

Internship Program
Cardiovascular Critical
Care in the ICU



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01 Introduction

The management of patients with cardiovascular pathology in critical condition is frequent in emergency departments as well as in coronary, intensive care and post-surgical units. The proper diagnosis and management of acute cardiac pathology is decisive for the patient's evolution and short-, medium- and long-term prognosis. This program was created with the premise of offering the specialist a practical update of adequate knowledge in this field, through complete immersion in the work of a first level hospital. A high intensity process that will confront you with the reality of this specialty, working hand in hand with specialists of recognized competence and making use of the most innovative technology in the sector.



This Internship Program will immerse you from the very beginning in the technical advances in the care of the critically ill cardiovascular patient"





As the field of cardiology is one with a propensity for numerous scientific advances and research, it is common for specialists in the area to continually seek access to the most advanced postulates or to update their knowledge through theoretical programs. However, a great alternative to access the latest developments is through an Internship Program, getting directly involved in an ICU Service with special focus on Cardiovascular Critical Care.

For this reason TECH presents this program, in which the specialist will be integrated in Cardiovascular Critical Care in the ICU Service for 3 weeks. Accompanied by an expert who will serve as support throughout the process, the specialist will have access to the most rigorous approaches and the most effective guidelines for action in cardiac pathology, being a full part of the center's multidisciplinary team.

It is, therefore, a unique opportunity to get involved in a real environment, accessing the most advanced clinical material and being able to treat cardiac pathologies of various kinds in situ, in a defining experience for the updating of the medical professional. All this makes up a unique program, which moves away from the theoretical concept to respond to the practical updating needs of specialists.

02

Why Study an Internship Program?

TECH provides medical professionals with a program that responds to their need to update their knowledge through a Practical Internship Program, which moves away from the theoretical concept to direct applications in real healthcare scenarios. For this reason, the doctor will spend a stay in a prestigious hospital center, integrated in an excellent team of professionals with extensive experience in Cardiovascular Critical Care in the ICU service. This will allow you to spend 3 weeks updating your knowledge in an innovative and avant-garde environment, where the latest and most advanced techniques in this area are used. A process where you will not be alone, since you will be accompanied and tutored by a specialist, who will show you the day-to-day life in a reference center, as well as the procedures and protocols used to offer the patient the most excellent care.



TECH provides you with a unique, advanced and effective program, where you will be able to update your knowledge in a unique practical stay"

1. Updating from the latest TECHNIQUES available

The area of Cardiovascular Critical Care in the ICU service has improved its procedures, methodologies and techniques, thanks in turn to scientific and technological advances. Progress that makes a difference in the care received by patients and their ability to recover. Thus, from the beginning of this practical stay, the professional will have the opportunity to test the latest techniques available in this area and integrate them into their daily work.

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

During the training period, the professional will have a large team of specialists who will accompany them throughout the practical period, which is a guarantee of unprecedented updating. With a specifically designated tutor, the clinician will be able to see real patients in a state-of-the-art environment, which will allow them to incorporate the most effective procedures and approaches in Cardiovascular Critical Care in the ICU service into their daily practice.

3. Entering First-Class Clinical Environments

In order to guarantee the professional access to a prestigious clinical environment in the area of Cardiovascular Critical Care Internship Program in the ICU service, TECH carefully selects all the centers available for Internship Programs. In this way, the healthcare professional will obtain, in an excellent environment, the update they are looking for in terms of the diagnostic and treatment procedures used in this field.



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

In this program TECH moves away from the theoretical framework, to fully enter the professional in a practical phase, where they can integrate 100% of all the processes, methods and techniques that they carry out during the practical stay. Thus, for 3 weeks you will live a unique professional experience in a prestigious hospital center, surrounded by a magnificent team.

5. Expanding the Boundaries of Knowledge

TECH gives professionals the opportunity to take an advanced update of their knowledge in a leading clinical center and with professionals of excellent experience in Internship Program in Cardiovascular Critical Care in the ICU service. This will be a turning point in your career, as you will be able to integrate the most innovative methods into your daily practice and keep up to date with the most up-to-date equipment in this area.



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

03 Objectives

The general objective of the Internship Program in Cardiovascular Critical Care in the ICU service is to update the professional in diagnostic and therapeutic procedures. For this purpose, TECH provides hospital centers, which are at the forefront in this field and whose procedures you can integrate into your regular clinical practice.



General Objectives

- ♦ Master the latest techniques, modern scientific postulates and application of cutting-edge technologies in cardiovascular patient care in the Cardiovascular ICU Service
- ♦ Incorporate the most effective methods, approaches and clinical analyses into daily work, backed by a team of prestigious experts in the field of Cardiovascular Critical Care
- ♦ Know the most recent protocols in relation to the treatment of acute coronary syndrome





Specific Objectives

- Explain the echocardiographic manifestations corresponding to these pathophysiological alterations
- Correlate the metabolic alterations produced in heart failure and the influence that medical treatment has on them
- Describe the pathophysiological and anatomical alterations in coronary circulation which leads to the appearance and clinical manifestation of ischemic heart disease
- Use the available resources in a way that guarantees continuous self-learning and periodically bringing knowledge in this area up to date
- Identify the possible complications in the context of acute coronary syndrome.
- Describe the types of tachycardia and their differential diagnosis based on the electrocardiogram characteristics findings
- Identify the pharmacological and invasive treatment options and the scientific basis that supports each one
- Explain the expected and most common electrical disorders based on the patient profile and the underlying cardiac or extracardiac pathology
- Explain the types of bradyarrhythmias and their risk of progression to cardiac arrest due to asystole
- Describe the echocardiographic planes and the structures to look out for in each one of them
- Explain the hemodynamic calculations based on echocardiographic Doppler technology and their importance in the cardiovascular critical patient
- Identify the most common expected findings in an echocardiogram in a patient in surgery or undergoing structural or coronary interventionism
- Identify acute complications in patients with acute myocardial infarction
- Explain the indication of intubation, invasive and non-invasive mechanical ventilation in a critical cardiovascular patient
- Describe the hemodynamic and respiratory impact of each type of ventilation
- Identify the need for drainage in a pericardial effusion
- Define the possible complications and the natural evolution of the patient undergoing cardiac surgery
- Explain the echocardiographic and hemodynamic alterations present in patients with indications of emergency surgery for acute valvular disease
- Identify the key aspects in the treatment of myocarditis, pericarditis and pericardial effusion



With this program you will be able to master the new diagnostic and therapeutic procedures for the management of the ICU patient requiring Cardiovascular Critical Care"

04

Educational Plan

The Internship Program of this program in Cardiovascular Critical Care in the ICU service consists of a practical stay at the CIMA SANITAS Hospital in Barcelona, lasting 3 weeks, from Monday to Friday with 8 consecutive hours of practical training with an attending specialist. This stay will allow you to see real patients alongside a team of leading specialists in the area of Cardiovascular Critical Care in the ICU, applying the most innovative diagnostic procedures and planning the latest generation of therapy for each pathology.

In this completely practical training proposal, the activities are aimed at improving the diagnosis and management of patients who have suffered myocarditis, acute coronary syndrome, pericardial effusion and cardiac tamponade. It will also give a more comprehensive view on the care of special or life-threatening patients.

It is undoubtedly an opportunity to learn by working in the innovative hospital of the future where real-time health monitoring of patients is at the heart of the digital culture of its professionals. In this way, the professional will be able to integrate the most significant advances in this area into his or her daily work, with a direct impact on the care provided to patients.

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 the professors and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for medicine Analysis (learning to be and learning to relate).



The procedures described below will form the basis of the practical part of the training, and their completion 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:

Module	Practical Activity
Management of the critically ill patient with heart failure, cardiogenic shock Diagnose and treat heart failure and acute coronary syndrome (ACS)	Diagnosing and treating acute pulmonary edema
	Participate in the management of patients with Cardiogenic Shock.
	Perform diagnosis and treatment of non-ST-segment elevation ACS.
	Recognize the expected complications and chronic treatment in NSTEMACS.
	Perform diagnosis and treatment of ST-segment elevation ACS.
Arrhythmias and cardiac pacing devices: diagnosis and management in acute phase	Diagnosis and treatment of Canalopathies.
	Diagnosing and Treating Preexcitation
Noninvasive cardiac imaging, functional testing and techniques in the cardiovascular critical care patient	Implement the latest echocardiographic procedures.
	Perform transthoracic and transesophageal echocardiography.
	Perform and interpret cardiac CT or MRI.
	Practice Intubation and invasive mechanical ventilation.
	Perform pericardiocentesis and arterial and central venous cannulation.
	Placement of counterpulsation balloon and placement of transient pacemaker.

Module	Practical Activity
Special situations in the cardiovascular critical care patient Analyze the patient before, during and after cardiac surgery	Diagnose and treat acute valvular pathology.
	Diagnosis and treatment of myocarditis.
	Diagnose and treat pericarditis, pericardial effusion and cardiac tamponade.
Action Guides in Acute Heart Disease	Address, diagnose and treat ACS-NSTEMACS and ACS-NSTEMI.
	Practice Revascularization and DAPT
	Diagnosis and treatment of Ventricular Arrhythmias and SCD - Criteria for ICD implantation
	Diagnosing and treating syncope
Surgery, anesthesia and intensive care in Congenital Cardiac Surgery	Participate and support in the implementation of palliative and corrective surgical techniques.



Train in an institution that can offer you all these possibilities, with an innovative academic program and a human team capable of developing you to the maximum"

05 Where Can I Do the Internship Program?

In its maxim of offering quality education within the reach of the majority of people, TECH has decided to broaden its academic horizons so that this training can be given in different centers around the world. A unique opportunity that allows the professional to continue to grow his or her career alongside the best specialists in the sector in various centers of reference.



Take your Internship Program in a prestigious hospital center and put into action everything you have learned under the guidance of the best professionals in the sector"





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 Maternidad HM Belén

Country	City
Spain	La Coruña

Address: R. Filantropía, 3, 15011, A Coruña

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

Related internship programs:

- Update in Assisted Reproduction
- Hospitals and Health Services Management



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	City
Spain	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	City
Spain	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 Sanchinarro

Country	City
Spain	Madrid

Address: Calle de Oña, 10, 28050, Madrid

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

Related internship programs:

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine.

Hospital HM Puerta del Sur

Country	City
Spain	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



Clínica Yunes

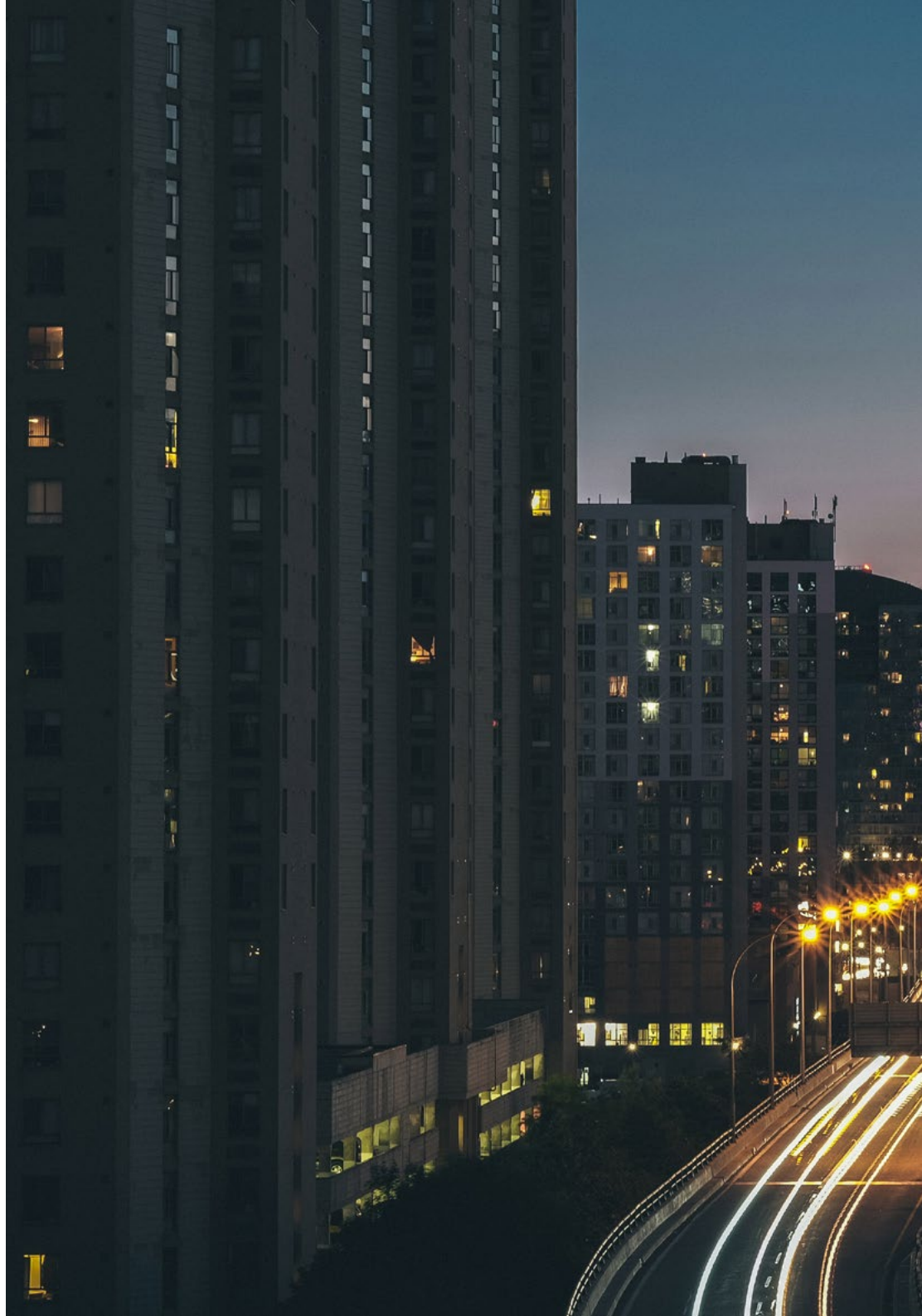
Country	City
Argentina	Santiago del Estero

Address: Av. Libertad 626/640, G4200
Santiago del Estero

Clinic specializing in cardiovascular care

Related internship programs:

- Cardiovascular Critical Care in the ICU





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Take advantage of this opportunity to surround yourself with expert professionals and learn from their work methodology”

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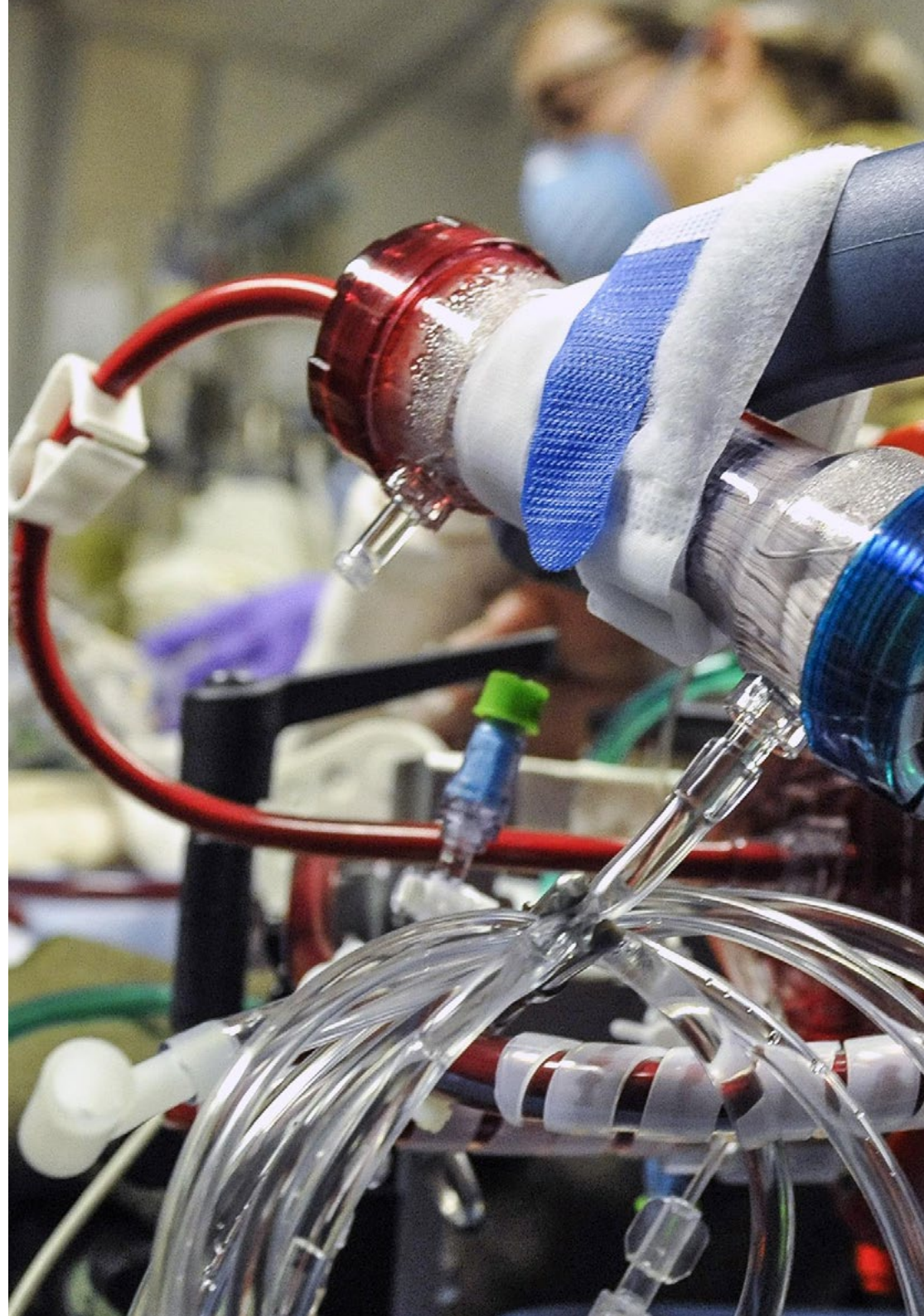
General Conditions

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 educational entity undertakes to take out civil liability insurance to cover any eventuality that may arise during the stay at the internship 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 Studies Some centers may require a certificate of previous studies 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 Cardiovascular Critical Care in the ICU** contains the most complete and updated program in the professional and academic panorama.

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

The diploma issued by TECH will state the score obtained in the test.

Program: **Internship Program in Cardiovascular Critical Care in the ICU**

Duration: **3 weeks**

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

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



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