





Hybrid Master's Degree

Acute Coronary Syndrome

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 créditos ECTS

We bsite: www.techtitute.com/us/medicine/hybrid-master-degree/hybrid-master-degree-acute-coronary-syndrome

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01 Introduction

For the management of acute coronary syndrome, medical research in recent years has contributed a large number of diagnostic and treatment procedures and high-caliber devices. The dizzying speed with which these advances have occurred has caused certain difficulties for specialists to keep up to date and integrate these innovations into their professional practice. For this reason, TECH has created this Hybrid Master's Degree that brings together the most innovative content in this area of Cardiology. For its assimilation, the physician will have two well-differentiated academic phases. In the first, they will study from a 100% online platform with numerous multimedia resources. Afterwards, they will carry out an intensive face-to-face stay, where they will apply their new competencies in a prestigious and rigorous hospital center.



tech 06 | Introduction

In recent times, medical sciences have devoted multiple research studies to find more complete and comprehensive diagnostic and treatment methods against ischemic heart disease. Therefore, powerful tools such as Echocardiography, Coronary Angiography or Nuclear Stress Ischemia Test have evolved. Likewise, complex therapeutic methods such as coronary angioplasty with stenting, radiofrequency ablation therapy and coronary revascularization without extracorporeal circulation have also appeared. Keeping up to date on these and other advances, such as cell therapy, can be cumbersome for specialists. In particular, the development of this practice becomes more complex in a context where academic programs with high theoretical load and that do not pay attention to the development of practical competencies prevail.

TECH wants to leave behind this unsatisfactory context by designing a study modality that adjusts to the training needs of the cardiologist. Therefore, this Hybrid Master's Degree in Acute Coronary Syndrome has two differentiated stages. In the first one, the physician will have 1,500 hours of theoretical learning from an interactive platform. You will also use innovative teaching methods such as Relearning to assimilate new content quickly and flexibly. Until you complete this preparation phase, you will not have to worry about pre-established schedules or rigid evaluation chronograms. At any time, you will be free to study from the comfort of any device connected to the Internet.

Upon completion of this theoretical training, the professional will have at their disposal the possibility of a practical and face-to-face internship at a state-of-the-art hospital center. Their transit through these institutions, which lasts 3 weeks, will allow them to apply the procedures learned directly in real cases. In addition, you will be guided by internationally renowned experts who will supervise your academic progress while facilitating the management of complete tools that today distinguish the evolution and development of protocols on Acute Coronary Syndrome.

This **Hybrid Master's Degree in Acute Coronary Syndrome** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by medical professionals with extensive experience in the management of Acute Coronary Syndrome
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Comprehensive systematized action plans for the main pathologies
- Presentation of practical workshops on procedures diagnosis, and treatment techniques
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Practical clinical guides on approaching different pathologies
- All of this will be complemented by 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
- Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers



Complete the 3 weeks of face-to-face practice of this Hybrid Masters Degree and develop by yourself complex, minimally invasive Revascularization procedures in your patients with Acute Coronary Syndrome"

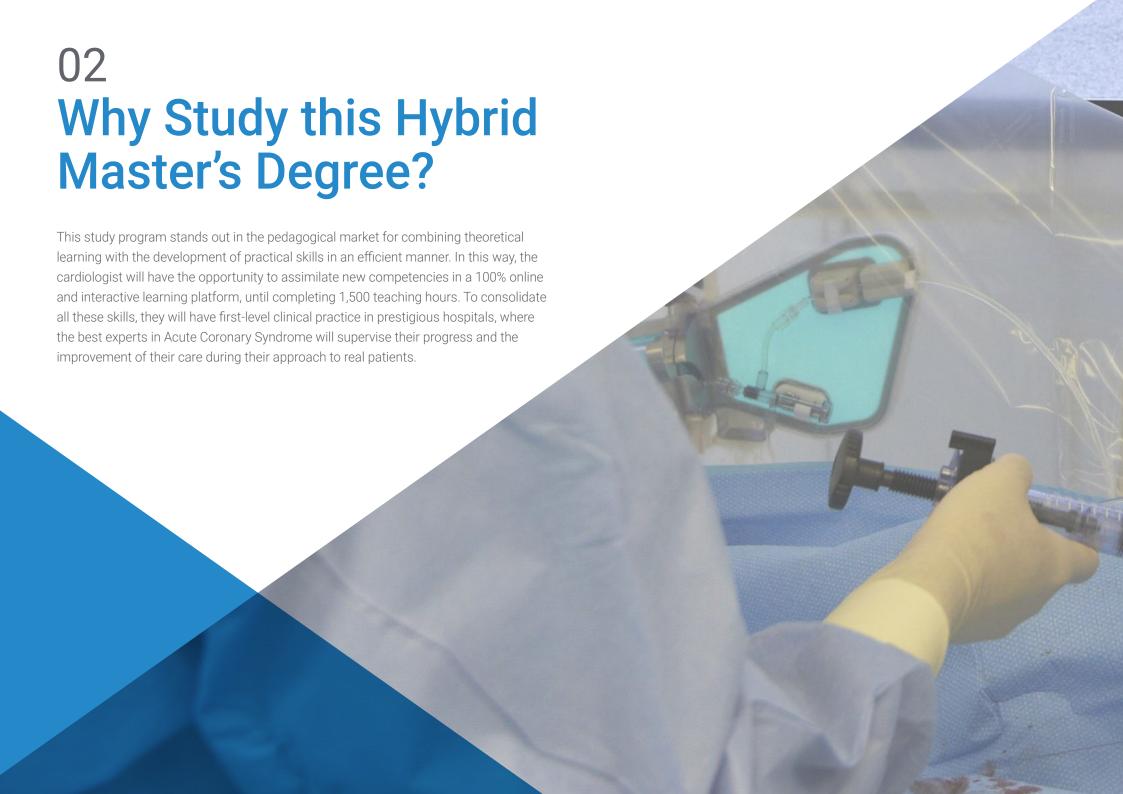
In this Hybrid Master's Degree, with a vocational nature and blended learning modality, the program is aimed at the development of Medical professionals who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in an educational way to integrate theoretical knowledge into practice, and the theoretical-practical elements will facilitate knowledge update and decision-making in patient management.

Thanks to its multimedia content developed with the latest educational technology, TECH will allow the professional to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

This curriculum is all you need to get up to speed on the latest therapeutic protocols in hospital coronary units.

Update your skills in the approach to patients with obstructed arteries through complex care methodologies such as coronary angioplasty with stenting.







tech 10 | Why Study this Hybrid Master's Degree?

1. Updating from the Latest Technology Available

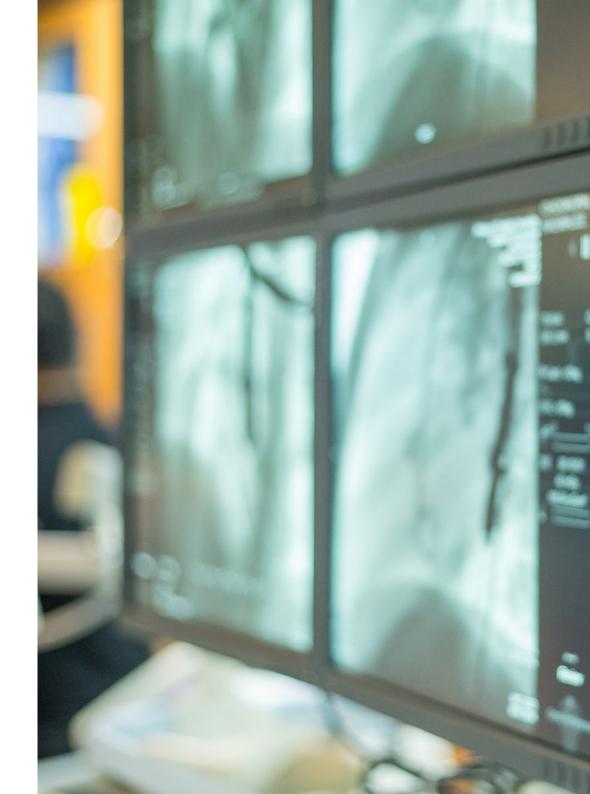
The area of Cardiology has made considerable advances in recent years and, therefore, highly innovative technological devices have been implemented in its care strategies. Throughout this program, the physician will develop their competencies, integrating these tools to their skills and daily practice, through a process of theoretical and practical study of the highest quality.

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

During the two learning stages that make up this Hybrid Master's Degree, the Doctor will have access to the best in this sector. First of all, they will have access to an excellent faculty that will clarify doubts and concepts of interest in the theoretical stage. Likewise, during the internship, they will work directly with distinguished experts in the most renowned and competitive hospital centers.

3. Entering First-Class Clinical Environments

For the practical internship of this program, TECH has made a careful selection. Therefore, the physician will have access to first level healthcare environments, where they will be able to handle the latest surgical and non-invasive technologies for the management of Acute Coronary Syndrome. At the same time, they will be guided by prestigious specialists who will help them to be trained in the application of the most current procedures for this Health concern.





Why Study this Hybrid Master's Degree? | 11 tech

4. Combining the Best Theory with State-of-the-Art Practice

Throughout 3 weeks of on-site internship in a prestigious hospital center, the Doctor will put into practice everything learned in the theoretical phase of this Hybrid Master's Degree. Therefore, from the first moment, they will deal with real cases with ischemic pathologies, developing an up to date vision of the techniques and tools for their therapy and diagnosis.

5. Expanding the Boundaries of Knowledge

TECH, the world's largest online university, aspires that all its students have a first class education, according to the most up-to-date international standards. For this reason, the professional who is studying this Hybrid Master's Degree, will have the opportunity to choose different medical centers for their practical internship, which will be located in different continents.





This Hybrid Master's program has been designed by TECH to prepare the Cardiology professional in the application of the most innovative procedures regarding the management of Acute Coronary Syndrome. The physician will acquire these skills in two distinct educational stages. The first one will facilitate the assimilation of theoretical contents from a 100% online and interactive learning platform. Afterwards, they will be able to attend a clinical internship of 120 educational hours in which they will be able to put into practice all the subjects previously covered in the healthcare of real cases.



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General Objective

• This Hybrid Master's Degree in Acute Coronary Syndrome focuses on developing in the specialist a deep understanding on the pathophysiology and incidence of the disease. At the same time, they will acquire the most modern evaluation and differential diagnosis skills, understanding the value of complementary techniques and resources. In addition, they will learn about reperfusion therapies, their limitations, advantages and disadvantages in the face of ischemic pathologies. It will also discuss the most complete Cardiac Rehabilitation programs of the moment and the best strategies for their personalization



Through two well-differentiated academic stages, TECH will put you up to date on the main theoretical and practical novelties for the comprehensive management of ischemic coronary pathologies"





Specific Objectives

Module 1. Ischemic Heart Disease: A Global Issue

- Internalize the change in the causes of mortality brought about by the development of more advanced societies and the reasons for it
- Recognize the causes of vascular disease and especially atheromatosis
- Master atherosclerosis stages and its complications, as well as the myocardium at risk
- Delve into the risk factors for developing atherosclerosis, both classic and new

Module 2. Clinical Presentation of Coronary Syndromes and Classification NSTEACS 1: Epidemiology. Pathophysiology and Classification

- Recognize the various clinical manifestations of coronary artery disease
- Classify acute coronary syndromes and their reasons
- Adapt the epidemiology and the different clinical presentations of ACS with ST-Segment Elevation
- Delve into the different electrocardiographic manifestations of ACS with ST-Segment Elevation
- Stratify patients by thrombotic and hemorrhagic risk to individualize their treatment
- Delve into variant angina and coronary vasospasm as a cause of ACS



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Module 3. NSTEACS 2: Imaging and Ischemia Detection Tests

- Correctly evaluate patients with chest pain in the emergency department and the value of chest pain units
- Assess the use of transthoracic ultrasound at the bedside in patients with chest pain
- Master the use of ergometry and stress echo in the assessment of the patient with chest pain
- Internalize the use of CT in the triple rule-out (coronary artery disease, aortic dissection and coronary artery disease) of chest pain
- Recognize the usefulness of MRI in patients with chest pain and the value of imaging tests in general in the long-term follow-up of these patients

Module 4. NSTEACS 3: Medical and Revascularization Treatment

- Delve into the different types of drugs used in the treatment of NSTEACS, which ones to
 use and for how long, with the exception of lipid-lowering drugs, which are reviewed in the
 prevention module
- Advise on the indications for revascularization of the patient with NSTEACS
- Control the different forms of revascularization possible and their respective advantages and disadvantages
- Master Percutaneous Revascularization Techniques
- Master the techniques of Surgical Revascularization

Module 5. NSTEACS 1: Clinical Picture, Presentation and Pre-Hospital and Emergency Assessment

- Develop knowledge in the different clinical presentations of NSTEACS
- Assess the patient with NSTEACS in the phase prior to arrival at the hospital
- Understand the electrocardiographic manifestations of this condition, its possible differential diagnoses and the evolutionary pattern over time
- Assess general treatment measures and initial monitoring and pharmacological treatment, as well as which treatments should not be used
- Internalize the importance of the decision of coronary reperfusion and activation of infarction code programs and the importance of timing and delays in this process

Module 6. NSTEACS 2: Patient Management in the Hospital. Coronary Unit

- Delve into the knowledge of the usefulness of the Coronary Units in the prevention and early treatment of the complications of NSTEACS
- Recognize the antianginal, lipid-lowering and antithrombotic treatment to be implemented in patients with NSTEACS
- Understand the most frequent mechanical complication of this entity, CHF, from the mechanistic, treatment and prognostic point of view
- Identify the rest of the potential mechanical complications (cardiac rupture, VSD and MI) and their incidence, treatment and prognosis

${\bf Module\,7.\,NSTEACS\,3:TTE\,and\,Other\,Imaging\,Tests\,in\,Acute\,Patient\,Assessment\,and\,in\,the\,Hospital\,Phase}$

- Monitor the usefulness of imaging techniques in the evaluation of patients with NSTEACS with suspected mechanical complications
- Monitor the usefulness of imaging techniques in the prognostic assessment of the patient with long-term NSTEACS
- Understand the new echocardiographic parameters that may be useful in the prognostic assessment of the patient
- Deepen the knowledge of MINOCA, patients with ischemic myocardial damage, but without evidence of obstructive epicardial coronary artery disease

Module 8. NSTEACS 4: Limitation of Infarct Size. Reperfusion Therapies

- Recognize the time course of myocardial ischemic necrosis and understand the problem of ischemia time
- Assess the available strategies for reperfusion fibrinolysis and primary angioplasty, their advantages and disadvantages
- Control the necessary material and protocols to perform fibrinolysis or primary angioplasty
- Know in detail the anticoagulant and antiplatelet therapy in the catheterization laboratory
- Describe a protocol for antiplatelet treatment in patients who also need to take anticoagulant drugs
- Internalize hemodynamic support measures during primary angioplasty
- Control the usefulness of regional reperfusion networks in the treatment of infarction

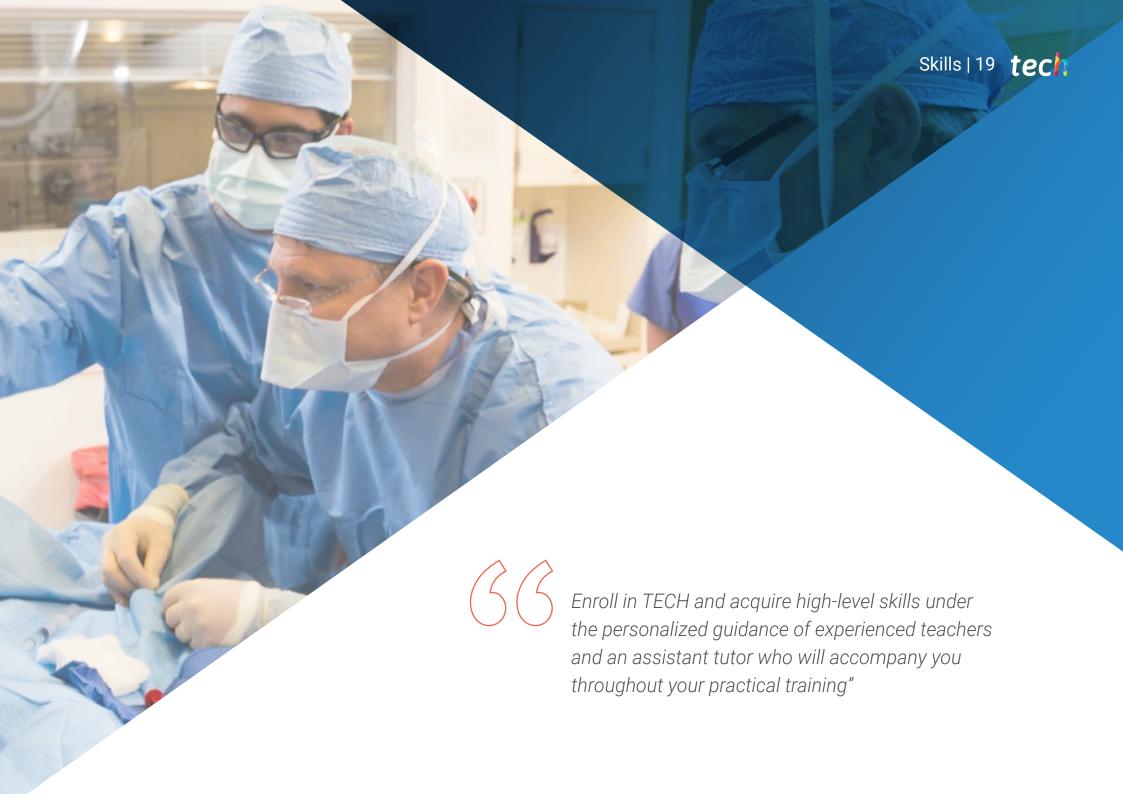
Module 9. NSTEACS Arrhythmias

- Understand the arrhythmia production mechanisms during ischemia
- Identify the main ventricular arrhythmias to be expected during NSTEACS and their treatment
- Recognize the problem of out-of-hospital sudden death and primary ventricular fibrillation
- Assess which supraventricular arrhythmias are to be expected in this pathology and which antiarrhythmic medication are appropriate during infarction
- Control the indications for pacemaker implantation and electrical cardioversion
- Internalize the indications for implantation of implantable defibrillators and resynchronizers and their results

Module 10. ACS Secondary Prevention. Cardiac Rehabilitation Programs

- · Develop optimization in the long-term treatment of ACS
- Understand the most appropriate eating habits and management of obesity in patients with ACS
- Deepen in the particularities of diabetic patients with ACS and specific treatment measures in this important group of patients
- Understand the utility and structure of Cardiac Rehabilitation programs
- Recognize the opportunities offered by telemedicine in Rehabilitation and specifically in its ambulatory phase





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General Skills

- Have a deep knowledge of Acute Coronary Syndrome (ACS) from its pathophysiology to its treatment and prevention
- In-depth knowledge of the keys to clinical management of patients with ACS, both in the out-of-hospital and in-hospital setting
- A adequately address the differential diagnosis of chest pain in the Emergency Room
- To virtually attend revascularization procedures and how to implement cardiac prevention and rehabilitation programs



With this degree, you will delve into the main diagnostic techniques and therapeutic aspects that solve health problems in patients with severe cardiological diseases such as Acute Coronary Syndrome"







Specific Skills

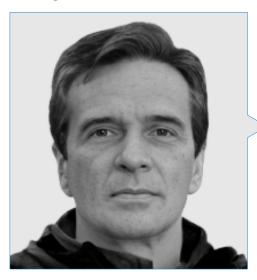
- Adequately recognize the clinical presentation of acute coronary syndromes, as well as their classification
- Have the necessary knowledge to perform a differential diagnosis of Ischemia Detection in the Emergency Department
- Manage the most up-to-date information on ischemic heart disease and atherosclerosis
- Identify when surgical revascularization is indicated and when percutaneous revascularization is indicated in patients with ACS
- Know, in-depth, the causes of sudden death and its prognosis
- Know the recommendations and contraindications of the main lipid-lowering and antianginal medication
- Assess transthoracic echocardiography in patients with ACS and recognize the usefulness of imaging techniques in prognostic assessment
- Study, in-depth, the different strategies to reduce the size of the infarct
- Manage the necessary knowledge related to arrhythmia: types, clinical management, treatments, recommended medication
- Understand the Cardiac Rehabilitation Programs: the most appropriate eating habits and the management of obesity in patients with ACS, as well as the recommended level of physical activity





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Management



Dr. Botas Rodríguez, Javier

- Head of Cardiology Service, Hospital Universitario Fundación Alcorcón
- Director of the Cardiac Catheterization Laboratory at the Hospital Universitario Fundación Alcorcón
- * Staff Cardiologist at the Hospital General Universitario Gregorio Marañón
- Associate Professor of Cardiology of the Degree in Medicine of the Universidad Rey Juan Carlos
- Doctorate in Medicine, Magna Cum Laude from the Faculty of Medicine at the Universidad Autónoma de Madrid
- Residency and specialization in Cardiology at the Hospital General Universitario Gregorio Marañón
- PhD in Interventional Cardiology from Universidad Leland Stanford Junior

Professors

Dr. Martínez Losas, Pedro

- Specialist in the area of Cardiology at the Hospital Universitario Infanta Leonor
- * Degree in Medicine from the Universidad of Alcalá de Henares
- * Specialist in Cardiology at the Hospital Clínico San Carlos (Madrid)
- Subspecialty in Acute Cardiac Care with a training grant from the SEC in the Acute Cardiovascular Care Unit at Hospital Universitario La Paz
- Expert in Atrial Fibrillation from the Universidad de Santiago de Compostela

Dr. Hernando Marrupe, Lorenzo

- * Interventional Cardiologist. Fundación Alcorcón University Hospital
- Physician Specialist of the Cardiology Department Prince of Asturias University Hospital
- Physician Specialist of the Cardiology Department San Carlos Clinical Hospital
- Author and co-author of numerous scientific publications
- Doctor of Medicine. Complutense University of Madrid

Dr. De Cortina Camarero, Cristina

- * Specialist in the area of Cardiology at the Hospital Universitario Infanta León
- Assistant Physician at the Cardiology Service, Hospital General Universitario Gregorio Marañón
- Assistant Cardiologist at Hospital Los Madroños
- * Assistant Cardiologist at CECAM, Hospital Universitario San Rafael
- Dependent Researcher of the the Noninvasive Cardiology Department of the Cardiology Service, Hospital General Universitario Gregorio Marañón
- Assistant Professor at the Universidad Complutense de Madrid
- PhD in Cardiac Medicine from the Universidad Complutense de Madrid
- Specialization in Cardiology at the Gregorio Marañón General University Hospital
- Master's Degree in as Diagnostic Imaging from the UCAM, Universidad Católica San Antonio de Murcia
- Master's Degree in Cardiology from the Universidad Miguel Hernández de Elche

Dr. Awamleh García, Paula

- Assistant Physician in the Coronary Unit of the Cardiology Department of the University Hospital of Getafe
- Doctor Cum Laude in Medicine, Rey Juan Carlos University
- Master's Degree in Acute Cardiac Care, Menéndez Pelayo University
- * Master's Degree in Cardiology from the Miguel Hernández University of Elche
- Expert in Electrocardiography, Catholic University San Antonio of Murcia
- Degree in Medicine and Surgery from the Complutense University of Madrid

Dr. Del Castillo Medina, Roberto

- Cardiologist Expert in Interventional Cardiology
- * Specialist Doctor at Hospital Universitario Fundación Alcorcón
- Researcher of the Infarction Code Working Group of the Interventional Cardiology Association
- Interventional Cardiologist at the Hospital Quirónsalud Sur
- Physician in the Acute Cardiac Care and Post-Surgical Recovery Unit
- Interventional Cardiology Specialist at Hospital HM Montepríncipe
- Medical Specialist in Cardiology at Hospital San Rafael y Hospital Universitario Infanta Leonor
- Master's Degree in Diagnostic and Therapeutic Electrophysiology, from the Universidad Complutense de Madrid
- Member of: Spanish Society of Pediatric Cardiology

Dr. Juárez Fernández, Miriam

- Cardiology Specialist
- Physician Specialist of the the Coronary Care Unit Department Gregorio Marañón General University Hospital
- Collaborating Doctor of Practical Teaching, Department of Medicine. Complutense University of Madrid
- Teacher of the Continuing Education Course "Practical Aspects in the Management of Atrial Fibrillation: Clinical Case Discussion
- PhD from the School of Medicine. Complutense University of Madrid
- Degree in Medicine and Surgery. Autonomous University of Madrid
- Cardiology Specialist Gregorio Marañón General University Hospital
- Member of: Spanish Society of Pediatric Cardiology

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Dr. Campuzano Ruíz, Raquel

- Coordinator the Cardiac Rehabilitation. and Prevention Unit of the from Hospital
 Universitario Fundación de Alcorcón
- Cardiologist responsible for Pulmonary Hypertension
- Cardiologist responsible for Ergospirometry at the Hospital Universitario Fundación de Alcorcón
- President Elect of the Cardiovascular Risk and Cardiac Rehabilitation Section of the Spanish Society of Cardiology
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Professional Master's degree in Cardiology from the UMH
- Doctorate Health Sciences, Universidad de Alcala
- Member of: Spanish Society of Cardiology Scientific Committee, Teaching Committee of the SEC, Sociedad Europea de Cardiología

Dr. Vaqueriza Cubillo, David

- FEA of Clinical Cardiology and Multidisciplinary Unit of Heart Failure Infanta Leonor University Hospital
- * Specialist from the Cardiology Unit. Hospital Beata María Ana de Jesús
- Degree in Medicine. Universidad Complutense de Madrid
- Cardiology residency 12 de Octubre University Hospital
- Online Master's Degree in Cardiology Universidad Miguel Hernández





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Dr. González Mansilla, Ana

- * Attending Physician. in Cardiology at the Hospital General Universitario Gregorio Marañón
- Medical Specialist, Hospital Universitario 12 de Octubre
- PhD in Medicine and Surgery from the Universidad Complutense de Madrid
- Member of: Cardiovascular Research Network of At Hospital Gregorio Marañón Biomedical Research Foundation, Cardiovascular Research Network of the Instituto de Salud Carlos III



The teachers of this learning program have extensive experience in Cardiology and are highly up to date in the management of Acute Coronary Syndrome"





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Module 1. Ischemic Heart Disease: A Global Issue

- 1.1. Ischemic Heart Disease. Normal Coronary Blood Flow and Coronary Artery Blockage
- 1.2. Cardiovascular Disease: the Leading Cause of Mortality in the Developed World Epidemiological Transition
- 1.3. CV Disease as a Cause of Mortality in Spain and Latin American Countries
- 1.4. Atherosclerosis: Phases
- 1.5. ACS Pathophysiology At-Risk Myocardium Anatomic Pathology Findings in ACS
- 1.6. Non-Atherosclerotic Causes of ACS
- 1.7. Classic Risk Factors for Atherosclerosis: Hypercholesterolemia and Smoking
- 1.8. Classic Risk Factors for Atherosclerosis: Age and Sex, Diabetes and Arterial Hypertension
- 1.9. New Atherosclerosis Risk Factors

Module 2. Clinical Presentation of Coronary Syndromes and Classification NSTEACS 1: Epidemiology. Pathophysiology and Classification

- 2.1. Forms of presentation of coronary artery disease: chronic and acute coronary syndromes
- 2.2. Operational Classification of ACS Based on ECG, Non-ST Segment Elevation ACS Epidemiology
- 2.3. Pathophysiology and Correlation with Anatomic Pathology
- 2.4. Unstable Angina and Non-Q AMI, Clinical Features
- 2.5. ECG and Non-ST Segment Elevation ACS
- Complementary Diagnostic Laboratory Tests and RXT in Non-ST Segment Elevation ACS
- 2.7. Risk Stratification, Thrombotic Risk Scales
- 2.8. Risk Stratification, Hemorrhagic Risk Scales
- 2.9. Variant Angina and Coronary Vasospasm Clinical Features
- 2.10. Vospasm Provocation Tests Treatment and Prognosis of Vasospasm

Module 3. NSTEACS 2: Imaging and Ischemia Detection Tests

- 3.1. Differential Diagnosis of TD in the Emergency Department
- 3.2. Imaging Protocols in Emergency Department TD Units Assessment and Algorithm for the Diagnosis of Patients with TD in the Emergency Department
- 3.3. Value of Transthoracic Echocardiography in the Assessment of the Patient with Suspected NSTEACS Use of POCUS
- 3.4. Ergometry and Effort Echo/Stress Echo in the Patient with TD in the Emergency Department Indications and Technique
- 3.5. Isotopic Perfusion Tests Indications and Technique
- 3.6. Coronary CT in the ED patient with TD Indications and Technique
- 3.7. Role of MRI in NSTEACS and Patients with Chest Pain Indications and Technique
- 3.8. Anatomical Approach vs. Functional in the Diagnostic Assessment of the Patient with Chest Pain
- 3.9. Long-Term Follow-Up Using Imaging Techniques

Module 4. NSTEACS 3: Medical and Revascularization Treatment

- 4.1. General and Monitoring Measures
- 4.2. Anti-Anginal Drugs: Beta Blockers
- 4.3. Anti-Anginal Drugs: Nitrates and Calcium Antagonists
- 4.4. Planetary Antiaggregants Which Ones and For How Long?
- 4.5. Anticoagulant Drugs Which Ones, How Much and Why?
- 4.6. Indications for Coronary Angiography and Revascularization
- 4.7. When Is Surgical Revascularization Indicated and When Is Percutaneous Revascularization Indicated?
- 4.8. Percutaneous Revascularization Techniques
- 4.9. Surgical Revascularization Techniques

Module 5. NSTEACS 1: Clinical Picture, Presentation and Pre-Hospital and Emergency Assessment

- 5.1. Clinical Presentations of NSTEACS
- 5.2. Out-of-Hospital Sudden Death Causes and Prognosis
- 5.3. Assessment of the Patient with NSTEACS in the Pre-Hospital Phase and in the Emergency Department (Clinical and Physical Examination) Initial Risk Stratification
- 5.4. ECG in the Acute Phase of NSTEACS and Correlation with Coronary Anatomy
- 5.5. ECG with ST Elevation: Differential Diagnosis
- 5.6. Evolving ECG Pattern in NSTEACS
- 5.7. General Treatment Measures and Initial Monitoring, Why Is It Important?
- 5.8. Initial Pharmacological Treatment of NSTEACS: Oxygen Therapy, Nitrates, Beta-Blockers
- 5.9. Pre-Hospital Antithrombotic Therapy: When and with What?
- 5.10. Indications for Coronary Reperfusion: The Problem of Timing

Module 6. NSTEACS 2: Patient Management in the Hospital. Coronary Unit

- 6.1. Role of the Coronary Care Unit, the Value of Monitoring and General Early Treatment Measures General Measures
- 6.2. Patient Stratification and Risk Scales
- 6.3. Complementary Laboratory Tests
- 6.4. Lipid-Lowering Drugs and Treatment Goals
- 6.5. Antianginal Drugs in NSTEACS
- 6.6. Platelet Antiplatelet Aggregation in NSTEACS
- 6.7. Anticoagulation Indications Anticoagulants
- 6.8. Complications of NSTEACS: Chronic Heart Failure (CHF)
- 6.9. Complications of NSTEACS: Cardiogenic Shock, Medical Treatment and Mechanical Support
- 6.10. Mechanical Complications of NSTEACS: Cardiac Rupture, VSD and MI

Module 7. NSTEACS 3: TTE and Other Imaging Tests in Acute Patient Assessment and in the Hospital Phase

- 7.1. CXR in NSTEACS
- 7.2. Value of Transthoracic Echocardiography in the Patient with NSTEACS
- 7.3. Transthoracic Echocardiographic Assessment of Mechanical Complications of NSTEACS
- 7.4. Echocardiographic Assessment of the Patient with Heart Failure or Cardiogenic Shock
- 7.5. Usefulness of Imaging Techniques in the Prognostic Assessment of the Patient with NSTEACS Diagnostic Assessment of Residual Ischemia and Myocardial Viability
- 7.6. New Techniques for Myocardial Deformation in NSTEACS
- 7.7. MINOCA Causes and Prognosis
- 7.8. Usefulness of MRI in Patients With Myocardial Damage Without Epicardial Coronary Disease
- 7.9. Assessment of Myocardial Perfusion by Contrast Echocardiography Correlation with Angiographic Findings

Module 8. NSTEACS 4: Limitation of Infarct Size. Reperfusion Therapies

- 8.1. Myocardial Necrosis and Ischemia, the Problem of Ischemia Time
- 8.2. Strategies to Decrease Infarct Size: Fibrinolysis vs Primary Angioplasty
- 8.3. Fibrinolysis, Advantages, Disadvantages and Protocols
- 8.4. Primary Angioplasty Technique and Requirements
- 8.5. Stents: Types and Results Thrombus Extractors?
- 8.6. Antiplatelet and Anticoagulation Treatment During PCI
- 8.7. Long-Term Anti-Aggregation Treatment
- 8.8. The Problem of Antiplatelet Treatment in Patients Who Also Take Anticoagulant Drugs Protocols
- 8.9. Hemodynamic Support During Primary Angioplasty Available Methods and Results
- 8.10. Infarction Code Programs and Regional Reperfusion Networks

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Module 9. NSTEACS Arrhythmias

- 9.1. Ischemia as a Cause of Arrhythmias: Mechanisms
- 9.2. NSTEACS Arrhythmias: EV, RIVA and TVNS (Meaning and Clinical Management)
- 9.3. Polymorphic and Monomorphic VT: Meaning and Treatment
- 9.4. VF and Out-of-Hospital Sudden Death in STEACS
- 9.5. Supraventricular Arrhythmias in NSTEACS
- 9.6. Antiarrhythmic Medication Used in STEACS
- 9.7. Cardioversion and Electrical Defibrillation: Protocols
- 9.8. Bradyarrhythmias and Blockages in STEACS Pacemaker Implantation Indications
- 9.9. Automatic Implantable Defibrillator: Indications, Results and Techniques
- 9.10. Cardiac Resynchronization, Indications and Outcomes

Module 10. ACS Secondary Prevention. Cardiac Rehabilitation Programs

- 10.1. Optimization of Medical Treatment after ACS
- 10.2. Diet and Obesity Management
- 10.3. Prescription and Types of Exercise
- 10.4. Control of Arterial Hypertension before and after ACS
- 10.5. Dyslipidemia Control Before and After ACS
- 10.6. Smoking Control
- 10.7. Diagnosis and Management of Diabetes in Ischemic Heart Disease
- 10.8. Cardiac Rehabilitation Programs: Evidence, Phases, Components and Process of Care
- 10.9. Telemedicine in Cardiac Rehabilitation
- 10.10. Continuity of Care after ACS and Cardiac Rehabilitation PHASE III Cardiac Rehabilitation

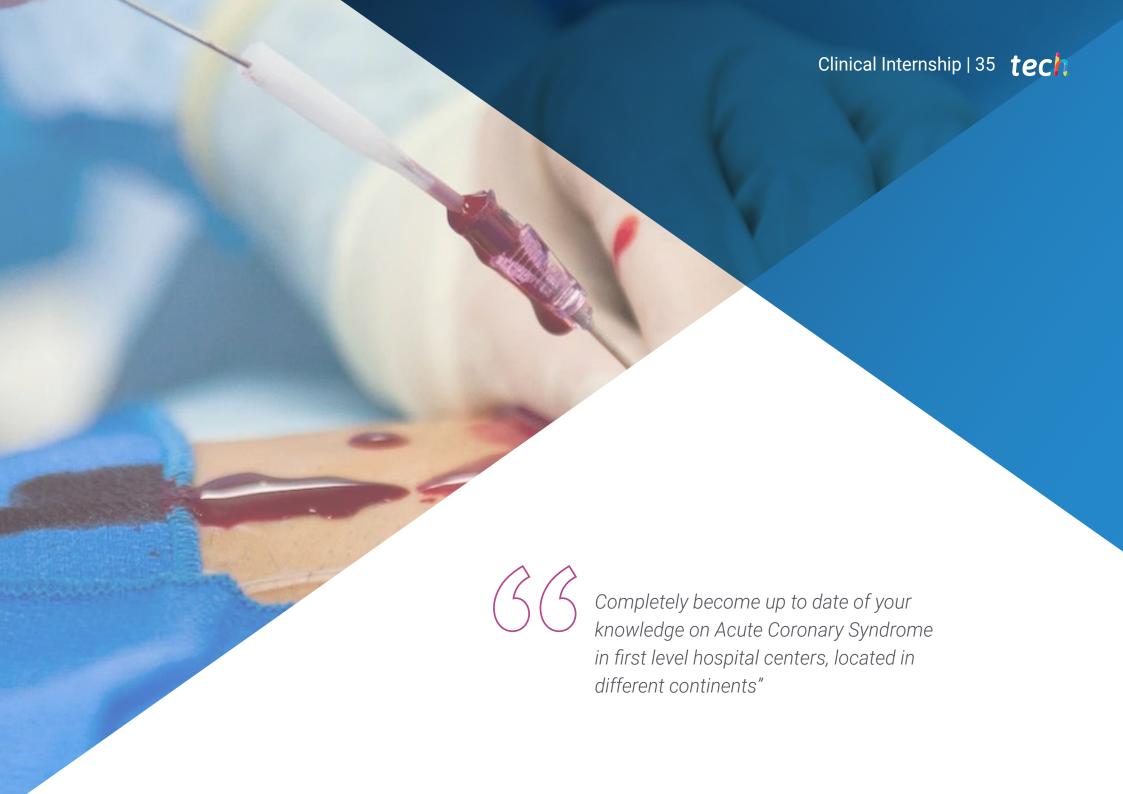






100% online, without timetables and with multiple interactive resources: this is the platform that TECH offers you for the theoretical learning of this Hybrid Professional Master's Degree"





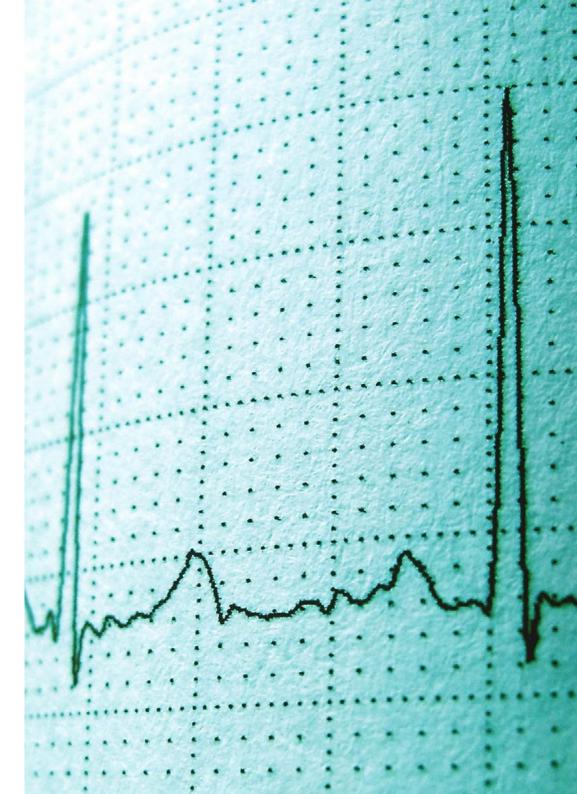
tech 36 | Clinical Internship

This internship has 120 teaching hours where the health professional will be incorporated into different care dynamics within a demanding Healthcare facility. From this health institution, they will apply the procedures and techniques assimilated theoretically in the approach of real cases with acute coronary pathologies such as ischemia.

During this internship, totally on-site and intensive, the professionals of cardiology will have to complete consecutive days of 8 hours, from Monday to Friday, during 3 educational weeks. Throughout this phase, work together with the best experts in the sector and be able to learn directly from their experience. At the same time, you will have the support of an assistant tutor who will be in charge of supervising your educational progress and will introduce you to the more complex tasks of the care unit.

The practical part 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 fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for medical praxis (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:



Module	Practical Activity
New trends in imaging tests and other techniques for the detection of Ischemia	Creating detailed images of the heart and the blood vessels that supply it through computed tomography
	Injecting contrast dye into the coronary arteries and imaging the coronary arteries through coronary angiography
	Evaluate blood flow through Echocardiography tools
	Obtain detailed images of the heart and blood vessels through Cardiovascular Magnetic Resonance Imaging
	Monitor the heart rhythm during Stress Tests indicated to the patient under suspicion of Ischemia
	Introduce a small amount of radioactive material into the body to detect any areas of the heart that are not receiving sufficient blood flow with the Nuclear Stress Ischemia Test
	Perform Holter monitoring and heart rate monitoring for patients at risk for cardiovascular disease
Latest Therapeutic Trends in Acute Coronary Syndrome and Revascularization Techniques	Unclogging the compromised arteries through coronary angioplasty with stenting that places a mesh to keep closed pathways open
	Remove the tissue that is causing the abnormal heart rhythm through Radiofrequency Ablation Therapy
	Implementing Coronary Revascularization surgery techniques that are performed without the need for Extracorporeal Circulation
	Administer live cells (cell therapy), such as stem cells, to the heart to help repair the damage caused by ischemia
	Perform complex procedures with greater precision and less invasiveness on the heart, using modern tools such as the DaVinci® surgical robot
Modern strategies in the management of of patients with cardiac ischemia in a hospital coronary unit	Relieve the pain of the ischemic patient and achieve stabilization of heart rate and blood pressure
	Dilating the coronary arteries, such as nitrates and beta-blockers, examples of treatments for cardiac ischemia
	Detect any changes in their health status and to ensure that they are receiving appropriate treatment

Module	Practical Activity
Latest therapeutic trends in Reperfusion to restore blood flow to the heart	Indicate fibrinolytic therapy (use of specific drugs) that breaks down the blood clot that is blocking the coronary artery
	Apply mechanical thrombectomy using a specific device to remove a clot from the coronary artery
	Use a small aspirator (suction coro nary thrombectomy) to remove the clot from the coronary artery
	Improve the patient's quality of life and recovery through minimally invasive revascularization techniques
New Cardiac Rehabilitation protocols	Personalize Cardiac Rehabilitation protocols according to the physical and psychological conditions of each patient
	Start with a gradual exercise program, with the objective of exponentially increasing the intensity and providing a better recovery of the patient
	Maintain health monitoring and strict control over the individual risk factors of each patient



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"

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 for Practical Training

The general terms and conditions of the internship program agreement shall be as follows:

- 1. TUTOR: During the Hybrid Master's Degree, 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 Hybrid Master's Degree, 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 Hybrid Master's Degree will receive a certificate accrediting their stay at the center.
- **5. EMPLOYMENT RELATIONSHIP:** the Hybrid Master's Degree shall not constitute an employment relationship of any kind.
- **6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Master's Degree. 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 Hybrid Master's Degree 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.





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The student will be able to complete the practical part of this Hybrid Master's Degree at the following centers:



Hospital HM Modelo

Country La Coruña Spain

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



Hospital HM Rosaleda

Country La Coruña Spain

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



Hospital HM San Francisco

Country City León Spain

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



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



Hospital HM Nou Delfos

Country 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



Hospital HM Madrid

Country 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



Hospital HM Torrelodones

Country 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



Hospital HM Sanchinarro

Country 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



Where Can I Do the Clinical Internship? | 43 tech



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



Hospital HM Vallés

Country City
Spain Madrid

Address: Calle Santiago, 14, 28801, Alcalá de Henares, Madrid

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

Related internship programs:

- Gynecologic Oncology
- Clinical Ophthalmology



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 Distrito Telefónica

Country City
Spain Madrid

Address: Ronda de la Comunicación, 28050, Madrid

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

Related internship programs:

- Optical Technologies and Clinical Optometry - General and Digestive System Surgery

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HM CIEC - Centro Integral de Enfermedades Cardiovasculares

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:

Cardiac Surgery
- Acute Coronary Syndrome



Country City
Spain Barcelona

Address: Avenida de Vallcarca, 151, 08023, Barcelona

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

Related internship programs:

Cardiac Arrhythmias - Acute Coronary Syndrome



Policlínico HM Gabinete Velázquez

Country City
Spain Madrid

Address: C. de Jorge Juan, 19, 1° 28001, 28001, Madrid

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

Related internship programs:

- Clinical Nutrition in Medicine - Aesthetic Plastic Surgery



Policlínico HM La Paloma

Country City Spain Madrid

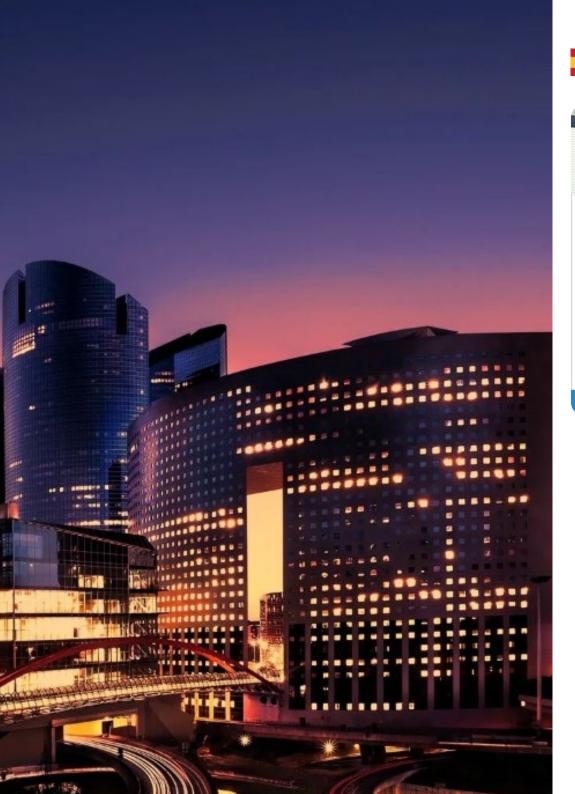
Address: Calle Hilados, 9, 28850, Torrejón de Ardoz, Madrid

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

Related internship programs:

- Advanced Operating Room Nursing - Orthodontics and Dentofacial Orthopedics





Where Can I Do the Clinical Internship? | 45 tech



Policlínico HM Las Tablas

Country City
Spain Madrid

Address: C. de la Sierra de Atapuerca, 5, 28050, Madrid

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

Related internship programs:

- Nursing in the Traumatology Department - Diagnosis in Physiotherapy



Policlínico HM Moraleja

Country City
Spain Madrid

Address: P.º de Alcobendas, 10, 28109, Alcobendas, Madrid

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

Related internship programs:

- Rehabilitation Medicine in Acquired Brain Injury Management



Policlínico HM Imi Toledo

Country City
Spain Toledo

Address: Av. de Irlanda, 21, 45005, Toledo

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

Related internship programs:

- Electrotherapy in Rehabilitation Medicine - Hair Transplantation





tech 48 | Methodology

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.



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:

- 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.



Methodology | 51 tech

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.

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.

tech 52 | Methodology

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

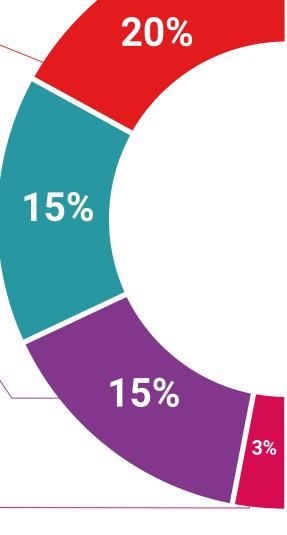
TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many 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.

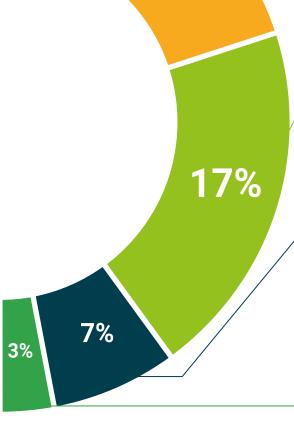
The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



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.









tech 56 | Certificate

This program will allow you to obtain your **Hybrid Master's Degree diploma in Acute Coronary Syndrome** 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: Hybrid Master's Degree in Acute Coronary Syndrome

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**



^{*}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.



Hybrid Master's Degree Acute Coronary Syndrome

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 créditos ECTS

