Advanced Master's Degree
Cardiac Medicine and Surgery

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Advanced Master's Degree
Cardiac Medicine and Surgery

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/in/medicine/advanced-master-degree/advanced-master-degree-cardiac-medicine-surgery

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01

Introduction

Heart disease is the leading cause of death worldwide. The relationship of these heart diseases with hereditary or congenital issues, or with factors such as obesity or sedentary lifestyles, is of great concern to the international population. Fortunately, the advances that are made every year in terms of treatments, drugs and protocols to treat these patients are increasingly effective and accurate. For this reason, cardiology specialists must continually update their knowledge and perfect the techniques used to treat and manage these clinical cases, in order to be able to offer accurate diagnoses and monitoring based on the latest scientific evidence, aspects that you can work on throughout this program.

A 100% online qualification that represents a perfect opportunity to update your knowledge of cardiology in a comprehensive way and without having to worry about schedules or face-to-face classes"

The risk of suffering a heart attack from hereditary or congenital heart disease is very high in society as a whole. According to the World Health Organization, these diseases have been the leading cause of death worldwide for more than 20 years. Therefore, the population has developed an exacerbated fear of suffering from these diseases because the risk factors are wide-ranging and sometimes even impossible to detect early or to identify the causes once they have occurred.

However, cardiac medicine has experienced tremendous progress in recent decades in terms of diagnosis, treatments and techniques for the prevention and intervention of heart diseases, which has been highly beneficial for patients. In relation to this, specialists in this field should continuously dedicate their time to learning about the latest advances, which would enable them to address these types of clinical cases based on the latest scientific evidence in cardiology.

In order to facilitate this task and allow them to pursue a qualification that updates their knowledge in an exhaustive manner and that fits in with the busy schedule of their practice, TECH has developed this comprehensive program in Cardiac Medicine and Surgery. This is a multidisciplinary program that delves into the anatomy and pathophysiology of the cardiovascular system, the specifics of Acute Coronary Syndrome and its derived conditions, and the broad spectrum that encompasses the area of Arrhythmias.

This multidisciplinary course will have a positive impact on improving your patient management skills and help you get up to date by studying the most comprehensive and innovative syllabus in the industry. In addition, there will be hours of additional material in different formats, including clinical cases presented by the teaching team, all of whom are experts in cardiac medicine with extensive experience in the treatment of both common and rare diseases.

This **Advanced Master's Degree in Cardiac Medicine and Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Case studies presented by experts in cardiology and surgery
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- Practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies in Cardiac Medicine and Surgery
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

With this Advanced Master's Degree you will obtain a global vision of ischemic heart disease and learn how to approach it comprehensively based on the latest scientific evidence in the field of cardiology"

You will deepen your understanding of the importance of the Heart Team, which will help you hone your leadership skills in terms of making team decisions about the approach to valvular pathologies"

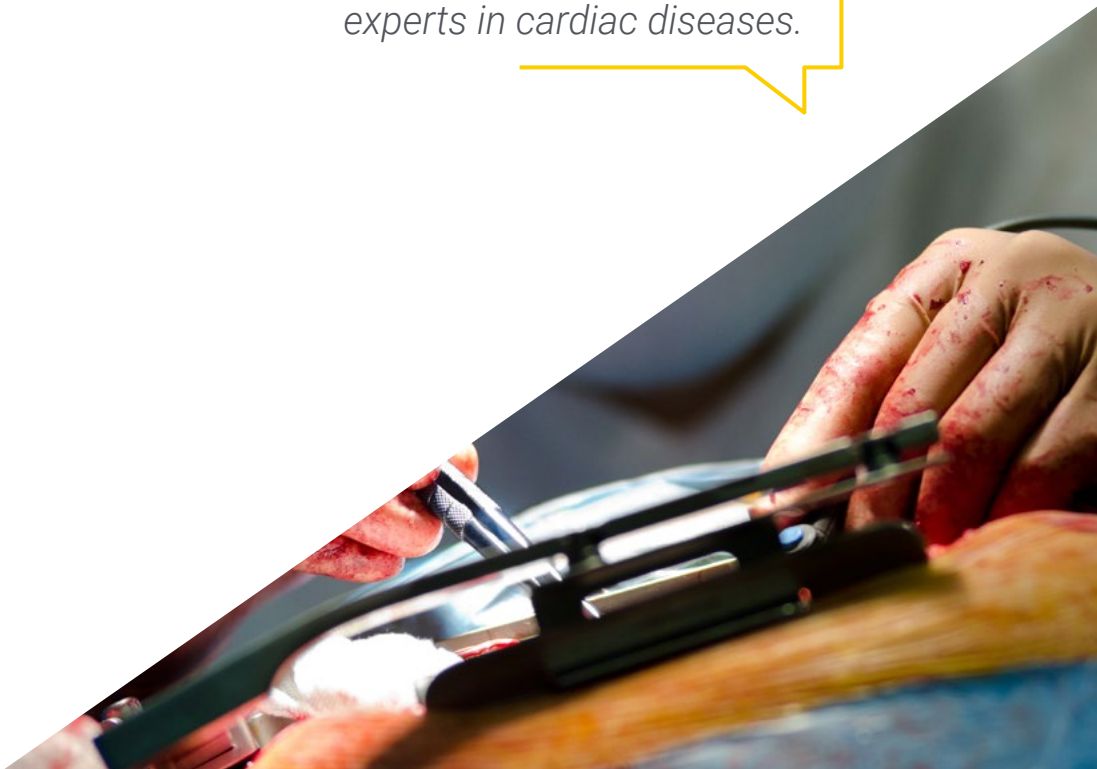
With this Advanced Master's Degree, you will acquire a broad and up-to-date vision of the latest electrostimulation devices, as well as their implantation and explantation.

It consists of 3,000 hours of the best theoretical and practical content, including real clinical cases presented by a team of experts in cardiac diseases.

Its teaching staff includes professionals from the field of cardiology, who contribute their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to train for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

The relevance of cardiac medicine in society and the need for patients to receive specific medical attention that is in line with the latest scientific developments, is what motivated TECH to design this program. Furthermore, the university is aware that these specialists have little time to study an academic program, so it has designed this Advanced Master's Degree with the aim of keeping them up to date on the latest developments in relation to Cardiac Medicine and Surgery, ACS and Arrhythmias.

You will find content dedicated exclusively to the pharmacological recommendations for each cardiac pathology, so that you can compare and implement them in your private practice"

General objectives

- Acquire in-depth knowledge of all cardiac diseases and their forms of treatment
- Broaden knowledge and understanding of extracorporeal circulation as a whole
- Analyze the importance of new technologies involved in the management and control of cardiac pathologies and imaging techniques
- Obtain the necessary knowledge to improve patient recovery, avoid complications and reduce mortality
- Obtain the most up-to-date knowledge to approach comprehensively and from the surgical point of view, as appropriate all valvular pathologies, ischemic heart, aortic pathology and congenital heart diseases
- Delve into the treatment of other cardiac pathologies, transcatheter valve implantation and concomitant diseases
- Develop in-depth knowledge of Acute Coronary Syndrome (ACS) starting with its pathophysiology and its importance as one of the main causes of death in civilized countries
- Gain professional skills in the assessment and differential diagnosis of chest pain in the emergency department, understanding the value of the different complementary techniques available
- Adequately classify the patient's initial risk and the most appropriate prehospital treatment and monitor measures in the prehospital phase
- Internalize reperfusion therapies, their limitations, advantages and protocols, understand the great importance of ischemia time
- Diagnose and manage the mechanical and arrhythmic complications that can occur in this syndrome
- Implement appropriate treatment measures during the hospital phase and the value of Coronary Units
- Develop the value and structure of Cardiac Rehabilitation programs
- Understand the treatments that have provided value in secondary prevention of these patients
- Delve into the diagnosis and treatment of arrhythmias based on clinical and electrocardiographic aspects, as well as invasive techniques and electrophysiological studies
- Broaden knowledge of the operation, monitor and implantation technique of the main implantable devices used for the treatment of arrhythmias
- Delve into the problems in cardiac rhythm disorder that can arise across the spectrum of patients
- Master the rhythm disorder problems present in the various scenarios encountered by the cardiologist in their routine clinical practice

Specific Objectives

Module 1. Anatomy and Pathophysiology of the Cardiovascular System

- Study embryology to understand the origin of cardiac anatomy
- Outline the basic aspects of the pathophysiology of the heart
- Carry out an in-depth study of the conduction system, coronary anatomy, great vessels and peripheral vascular system
- Acquire in-depth knowledge of all cardiac diseases
- Analyze hemostasis and the different pathways of blood coagulation
- Know the new trends in cardiovascular pharmacology

Module 2. Extracorporeal Circulation ECC

- Broaden the knowledge and understanding of extracorporeal circulation as a whole
- Perform an in-depth study of the new technologies implemented for their management and control
- Master protection and monitoring methods
- Master the techniques of cerebral cannulation and perfusion

Module 3. Perioperative Care

- Acquire in-depth knowledge of all perioperative measures and strategies
- Gain up-to-date knowledge of monitoring techniques in the operating room
- Understand ways to improve for optimal recovery of the surgical patient
- Perform an in-depth study of the techniques to be applied prior to surgery to avoid complications and reduce mortality
- Achieve more efficient postoperative control
- Reduce transfusions of blood products as much as possible

Module 4. Ischemic Heart Disease

- Obtain a multi-angle view of ischemic heart disease
- Know the comprehensive approach to ischemic heart disease
- Perform an in-depth study of angina and myocardial infarction
- Evaluate the diagnostic methods and natural history of coronary artery disease
- Understand the importance of the Heart Team in addressing different medical, percutaneous and surgical treatment strategies
- Delve into the surgical complications of myocardial infarction and the techniques to treat them

Module 5. Valvular Pathology

- Understand the surgical approach to valvular pathologies
- Perform an in-depth study of the causes of valvular pathologies and their treatment
- Understand the importance of the heart team in decision making in the approach to valvular pathologies
- Acquire in-depth knowledge of all surgical techniques for its treatment, including mini-incision surgery
- Evaluate different results of the different types of prostheses and surgical techniques used

Module 6. Pathology of the Aorta

- Delve into the notions of anatomy and physiology of the aortic root, given its involvement in the functioning and preservation of the aortic valve
- Learn more about surgical treatment techniques for acute aortic syndrome
- Review the main pathologies of the aorta artery by segments
- Observe the implications of acute aortic syndrome with its main surgical options
- Check different percutaneous treatment options

Module 7. Congenital Heart Disease

- Provide an overview of congenital heart disease through a detailed review of the most common pathologies
- Study the physiology of congenital heart diseases in order to group them according to their physiological behavior
- Make an anatomical description of each group of anomalies
- Verify the different surgical options to correct congenital cardiopathies
- Evaluate the best time to correct congenital heart disease

Module 8. Treatment of Other Cardiac Pathologies, Transcatheter Valve Implantation and Concomitant Conditions

- Study in depth the different cardiac pathologies and their surgical treatment
- Acquire in-depth knowledge of cardiac trauma and its surgical management
- Understand hereditary conditions such as myocardiopathies
- Delve into the diseases of the pericardium and the different cardiac tumors, both primary and secondary
- Analyze pulmonary thromboembolism, with its different surgical strategies
- Evaluate end-stage heart failure, updating knowledge of the new therapies by means of ventricular devices and cardiac transplantation
- Understand the importance of transcatheter therapies TAVI and mitral
- Deepen knowledge about certain extracardiac pathologies that interfere with extracorporeal surgery

Module 9. New Technologies and Imaging Techniques Statistics

- Delve into the less common but influential aspects of Cardiac Surgery
- Evaluate new technologies in Cardiac Surgery for the improvement of therapies
- Raise the level of interpretation of cardiovascular imaging
- Elaborate and understand studies through statistical analysis
- Delve into the concepts of care management and research methodology
- Analyze the evolution of Cardiac Surgery and its future perspectives

Module 10. Clinical Presentation of Coronary Syndromes (SCA) and Classification NSTE-ACS 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 SCASET
- Perform an in-depth study of the different electrocardiographic manifestations of NSTE-ACS
- Stratify patients by thrombotic and hemorrhagic risk to individualize their treatment
- Delve into variant angina and coronary vasospasm as a cause of ACS

Module 11. NSTE-ACS 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 12. NSTE-ACS 3: Medical and Revascularization Treatment

- In-depth study of the different types of drugs used in the treatment of NSTE-ACS, 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 NSTE-ACS
- Control the different forms of revascularization possible and their respective advantages and disadvantages
- Master percutaneous revascularization techniques
- Master the techniques of surgical revascularization

Module 13. NSTE-ACS 13: Clinical Picture, Presentation and Pre-Hospital and Emergency Assessment

- Develop knowledge in the different clinical presentations of NSTE-ACS
- Assess the patient with NSTE-ACS 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 14. NSTE-ACS 14. Patient Management in the Hospital. Coronary Unit

- Acquire extensive knowledge of the usefulness of the Coronary Units in the prevention and early treatment of the complications of NSTE-ACS
- Recognize the antianginal, lipid-lowering and antithrombotic treatment to be implemented in patients with NSTE-ACS
- 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

Module 15. NSTE-ACS 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 NSTE-ACS with suspected mechanical complications
- Monitor the usefulness of imaging techniques in the prognostic assessment of the patient with long-term NSTE-ACS
- Understand the new echocardiographic parameters that may be useful in the prognostic assessment of the patient
- Acquire in-depth knowledge of MINOCA, patients with ischemic myocardial damage, but without evidence of obstructive epicardial coronary artery disease

Module 16. NSTE-ACS 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 17. 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
- Delve into 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

Module 18. Arrhythmias. Fundamental Concepts

- Understand the fundamental mechanisms that produce arrhythmias, including cellular physiology, the conduction system, cardiac anatomy of arrhythmias (including a radiological approach) and the role of genetics
- Review the common antiarrhythmic drugs, focusing on their most important indications, contraindications and common adverse effects
- Review basic diagnostic techniques and common procedures in the Electrophysiology room

Module 19. Bradyarrhythmias

- Know the definition and types of bradyarrhythmias, as well as their basic mechanisms
- Review the available studies for its diagnosis and characterization
- Delve into the fundamental groups of Bradyarrhythmias (sinus node disease and AV blocks), with special emphasis on diagnosis and treatment
- Perform an in-depth study of the patient with syncope, from mechanisms and causes, to diagnosis and treatment
- Review in detail the current indications for pacemaker implantation

Module 20. Supraventricular Tachyarrhythmias

- Know the definition and types of supraventricular tachyarrhythmias and understand the differential diagnosis between these types
- Understand the management of these arrhythmias in the acute (emergency) and chronic (consultation) setting
- Review the main aspects of the electrophysiological study of these arrhythmias
- Acquire extensive knowledge of the epidemiology, clinical presentation, characteristics of the electrophysiological study and ablation techniques in the 4 main types of supraventricular tachyarrhythmias (nodal reentrant tachycardia, AV reentrant tachycardia, common atrial flutter and focal atrial tachycardia)

Module 21. Ventricular Tachyarrhythmias

- Review the key aspects of its diagnostic process, with a clinical and electrocardiographic approach
- Review the electrocardiographic differential diagnosis between wide QRS tachycardias
- Know the approach to these arrhythmias in the acute (emergency) and chronic (consultation) patient setting
- Review the pharmacological treatment of these arrhythmia
- Delve into the specific electrophysiological study of these arrhythmias, as well as the therapeutic approach using ablation techniques
- Review the knowledge of ventricular extrasystoles, from their mechanisms and initial approach, to therapeutic strategies, including the specific electrophysiological study

Module 22. Devices (Pacemaker, ICD and Resynchronizer)

- Review in detail the indication of pacemakers, their implantation technique, their basic operation, as well as the modes of programming and other aspects of follow-up
- Review in detail the indication for ICD, as well as the particularities of the implantation technique, operation and programming/monitoring
- Know the differential aspects of the novel physiological stimulation techniques, as well as their current indications and future perspectives
- Learn about other current implantable devices: wireless pacemakers and subcutaneous ICDs and review their indications
- Gain up-to-date knowledge on the electrode extraction technique and its indications

Module 23. Atrial Fibrillation

- Review the importance of atrial fibrillation: epidemiology and socioeconomic impact
- Review the main clinical aspects and the initial diagnostic approach
- Provide a detailed update on the complete management of atrial fibrillation, starting with the prevention of thromboembolism and continuing with the clinical management strategy
- Acquire knowledge of the ablation technique of atrial fibrillation: indication, evidence, technique and expected results Review the future of this technique
- Review the particularities of AF in other specific contexts and anticoagulation therapy in the patient with ischemic heart disease

Module 24. Arrhythmias and Heart Failure

- Review the importance of rhythm disorders in heart failure
- Know in depth the importance of the AF-Heart Failure relationship, from its epidemiology to its prognostic implication
- Review the role of antiarrhythmic drugs, and especially ablation, in the management of AF in patients with heart failure
- Gain up-to-date knowledge on the assessment of ventricular arrhythmias in heart failure, deepening the role of genetics and MRI
- Review the current indications for CRS therapy and other devices in HF
- Learn about the novel aspects of physiological stimulation therapies
- Review the concept of Tachycardiomyopathy with a broad approach, including its epidemiology, diagnosis and treatment, both pharmacological and electrophysiological

Module 25. Arrhythmic Syndromes, Sudden Cardiac Death and Channelopathies

- Have an in-depth knowledge of Sudden Cardiac Death: concept, epidemiology, causes, diagnostic study and clinical management
- Review the concept of channelopathies and their epidemiology
- Review the fundamental aspects of the most frequent channelopathies: Brugada Syndrome and Long QT Syndrome
- Learn the role of genetics in these entities Review the indications for family studies and how to perform them

Module 26. Myocardiopathies and Arrhythmias

- Review the general aspects of arrhythmias associated with cardiomyopathies
- Review the characteristics of the most frequent arrhythmias in dilated cardiomyopathy and arrhythmogenic dysplasia
- Delve into the prevention and management of ventricular arrhythmias, reviewing the indications for ICD in these pathologies
- Know the role of genetics in this context
- Review rhythm disorders associated with other less common cardiomyopathies

Module 27. Arrhythmias in Other Clinical Contexts

- Review the most common arrhythmias in patients without heart disease and in athletes
- Review the most common arrhythmias in the critical cardiac patient Know their epidemiology, diagnosis and management
- Know in detail the therapeutic algorithm of arrhythmic storm
- Review the indications and technique of transient pacemaker implantation
- Review the most frequent arrhythmias in the non-cardiac critical patient, after cardiac surgery and after TAVI, with special attention to their management
- Carry out a general review of the most prevalent arrhythmias in patients with congenital heart disease, as well as their fundamental implications and particularities of management

A program designed exclusively for medical professionals who, like you, are looking for a source of constant updating in their respective specialties"

03

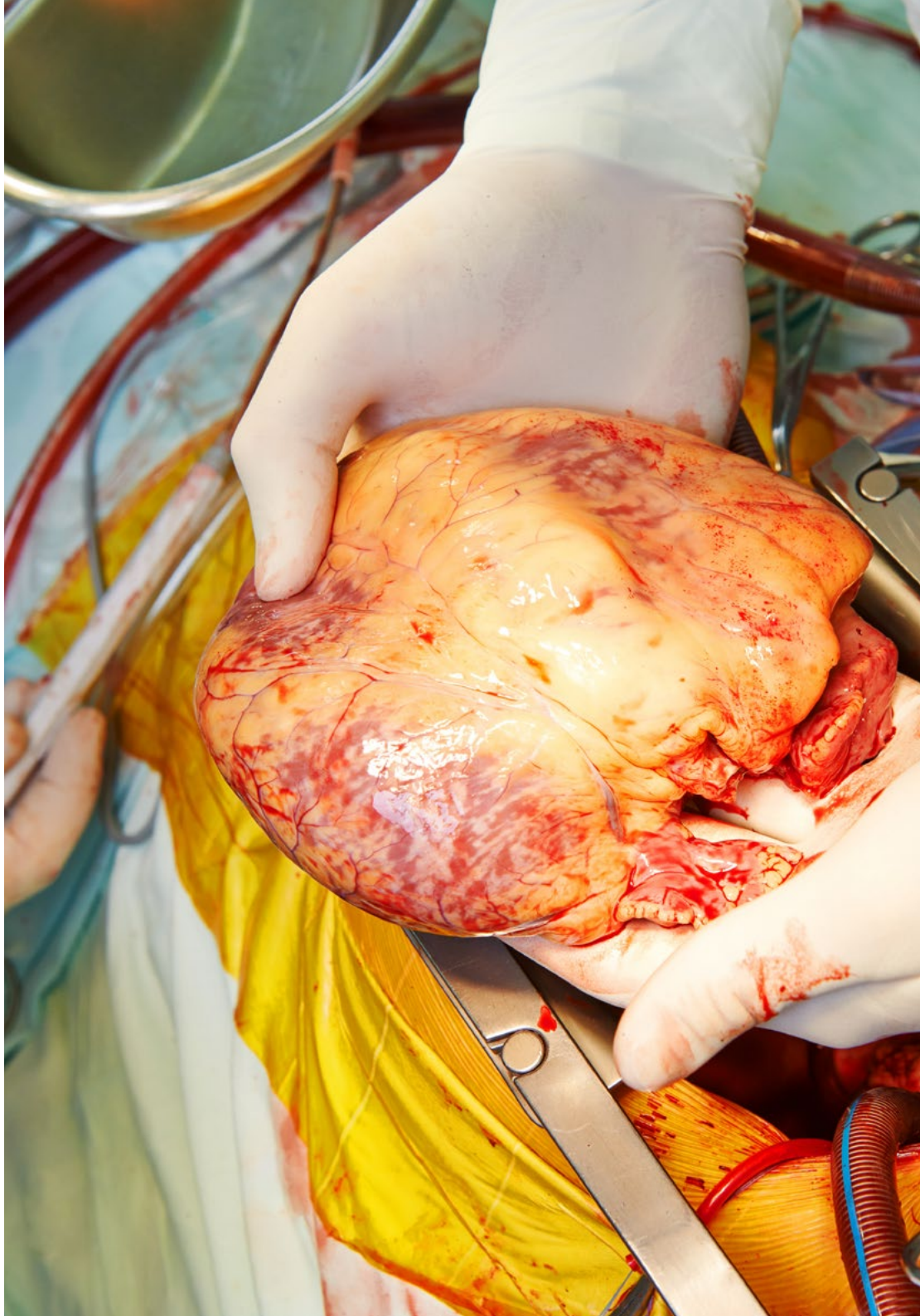
Skills

Thanks to this Advanced Master's Degree in Cardiac Medicine and Surgery, specialists will be able to perfect their medical skills and competencies and obtain a broad and up-to-date vision of the sector. This will boost your ability to manage patients with severe and rare clinical conditions, allowing you to treat them with confidence, knowing that you possess the knowledge you need to obtain successful results, and all based on the latest scientific evidence.

Learn the latest scientific details on the basic diagnostic techniques used in arrhythmias and delve into the common procedures for their application"

General skills

- Acquire in-depth knowledge that provides an opportunity in the context of Cardiac Surgery
- Apply acquired knowledge and problem-solving skills in large, solvent clinical settings
- Face complex clinical situations related to cardiac pathologies, including reflections related to the application of knowledge
- Communicate your findings to both specialized and non-specialized audiences in a clear and unambiguous manner
- Develop autonomously in a learning process with an innovative study methodology of advanced prestige and technology
- Have in-depth knowledge of Acute Coronary Syndrome (ACS) from its pathophysiology to its treatment and prevention
- Gain in-depth knowledge of the keys to clinical management of patients with ACS, both in the out-of-hospital and in-hospital setting
- Be able to adequately address the differential diagnosis of chest pain in the Emergency Room
- Be able to virtually attend revascularization procedures and how to implement cardiac prevention and rehabilitation programs
- Master the cardiac rhythm disorders that may present in a cardiology consultation or emergency room, from the healthy patient to patients with different types of heart disease
- Manage the latest advances in electroanatomical mapping systems
- Manage all types of devices, from conventional pacemakers, through novel physiological pacing to leadless pacemakers and subcutaneous ICDs
- Master patient management, both in the emergency and ward settings, as well as in the office setting, to the patient with specific pathologies such as Heart Failure, Cardiomyopathies or Arrhythmic Syndromes



Specific skills

- Create a global and up-to-date vision of Cardiac Surgery, acquiring a useful and deep knowledge.
- Approach all valvular pathologies from the surgical point of view
- Develop perioperative measures and strategies in surgical patients
- Master the new technologies implemented in CAardiac Surgery
- Generate interest to broaden knowledge in this area and discover its application to daily clinical practice
- Integrate less common aspects in Cardiac Surgery of great importance for the complete development of the specialty
- Approach different cardiac pathologies, as well as valvulopathies and ischemic cardiopathy and their surgical treatment
- Know the most relevant diagnostic techniques and therapeutic aspects in this field of medicine
- Create a global and up-to-date vision of Cardiac Surgery, acquiring a useful and deep knowledge
- Approach all valvular pathologies from the surgical point of view
- Develop perioperative measures and strategies in surgical patients
- Master the new technologies implemented in Cardiac Surgery
- Generate interest to broaden knowledge in this area and discover its application to daily clinical practice
- Integrate less common aspects in Cardiac Surgery of great importance for the complete development of the specialty
- Approach different cardiac pathologies, as well as valvulopathies and ischemic cardiopathy and their surgical treatment
- Know the most relevant diagnostic techniques and therapeutic aspects in this field of medicine
- Understand the organization and operation of the Arrhythmia Units
- Know the role of electrophysiological study in the diagnosis and management of Bradyarrhythmias
- Know the techniques and procedures used in the diagnosis of supraventricular tachyarrhythmias, as well as the drugs indicated for their treatment
- Understand the concept of ventricular tachycardia, from the mechanism to the most frequent types
- Manage the theoretical foundations on which resynchronization therapy is based and review its current indications. Review the particularities of its implantation and the ways of programming and follow-up
- Review the current knowledge on the implications and management of AHREs and subclinical AF
- Know the fundamental aspects of ventricular dysfunction due to pacing and the relationship between LBBB and ventricular dysfunction
- Know the most prevalent tachyarrhythmias and conduction disorders in cardiac amyloidosis, as well as the particularities of their management
- Manage the current algorithms for out-of-hospital cardiac arrest care

The team of experts has prepared for you an up-to-date list of indications for which reperfusion therapies are recommended in the management of coronary patients"

04

Course Management

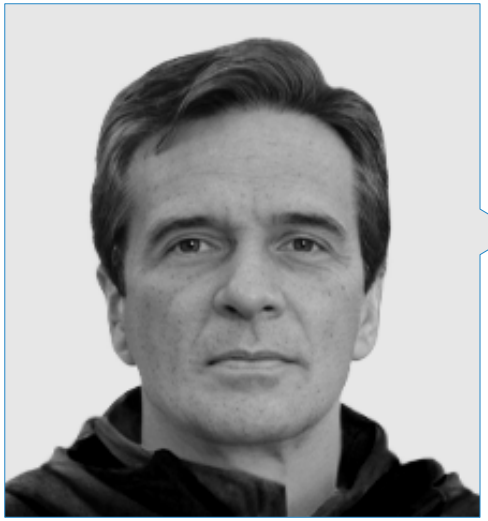
The management and teaching staff of this program is formed by a group of professionals who are specialized in the different branches of cardiology with extensive experience in the management of patients with various cardiac pathologies, both common and rare. However, this team has not only been chosen based on their professional profiles, but also for their human qualities and commitment to the profession - aspects that will be clearly reflected in the syllabus.

The experience of the teaching team and their current activity in the sector are factors that make this program a unique opportunity to share concerns about the specialty with experts and colleagues"

Management

Dr. Rodríguez Roda, Jorge

- Head of Cardiac Surgery Service by competitive examination. Ramón y Cajal University Hospital
- Cardiac Surgeon of the Cardiac Surgery Unit. Montepríncipe Madrid Hospital HM Group
- Professor Collaborating in the Department of Surgery. Alcalá de Henares University
- Assistance Coordinator of the Cardiovascular Surgery Service. Gregorio Marañón General University Hospital
- Attending Physician of Cardiovascular Surgery. Gregorio Marañón General University Hospital
- Attending Physician of Cardiovascular Surgery. Gómez Ulla Central de la Defensa Hospital
- Resident physician of the Cardiovascular Surgery, specialty in the Cardiovascular and Thoracic Surgery Service. Puerta de Hierro University Hospital. Madrid
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Resident Medical Intern in the specialty of Cardiovascular Surgery in the Department of Cardiovascular and Thoracic Surgery, Puerta de Hierro Autonomous University Hospital of Madrid
- Diploma of Advanced Studies (DEA) of the Department of Surgery, Faculty of Medicine at the Complutense University of Madrid



Dr. Botas Rodríguez, Javier

- Head of the Cardiology Service, Fundación Alcorcón University Hospital. Madrid
- Director of the Cardiac Catheterization Laboratory, Fundación Alcorcón University Hospital Madrid
- Cardiologist, Gregorio Marañón Hospital. Madrid
- Associate Professor of the Degree in Medicine at Rey Juan Carlos University, Madrid, since 2010
- Degree in Medicine and Surgery from the Faculty of Medicine at the Autonomous University of Madrid
- PhD in Medicine (Magna Cum Laude) from the Faculty of Medicine at the Autonomous University of Madrid
- Residency and specialization in Cardiology at the Gregorio Marañón University Hospital, Madrid
- Post-doctorate in Interventional Cardiology from Stanford University California

Dr. Jiménez Sánchez, Diego

- Assistant specialist in Cardiology at El Escorial University Hospital
- Assistant specialist in the Arrhythmia Unit of the Puerta de Hierro University Hospital
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- Specialist in Cardiology at the Puerta De Hierro University Hospital
- Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at San Pablo CEU University

Dr. Vázquez López-Ibor, Jorge

- Area Specialist Physician at Escorial Hospital
- Area Specialist at the ICC Day Hospital, Puerta de Hierro Hospital, Madrid
- Degree in Medicine, Complutense University of Madrid
- Theoretical and practical Master in Critical and Advanced Heart Failure (MICCA) at the Gregorio Marañón Hospital
- Theoretical and practical training in cardiovascular research at the National Center for Cardiovascular Research
- Fellowship in advanced HF, cardiac transplantation and pulmonary hypertension at the Puerta de Hierro University Hospital

Dr. Castro Urda, Víctor

- Area Specialist in the Cardiology Service of the Puerta de Hierro Hospital
- Degree in Medicine, Complutense University of Madrid
- Specialist in Cardiology at the Puerta De Hierro Hospital
- Stay at the Electrophysiology and Cardiology Department of the UZ Brussel Hospital, Belgium
- Master in Diagnostic and Therapeutic Cardiac Electrophysiology at the Complutense University of Madrid

Professors

Dr. Varela Barca, Laura

- Resident Intern at the Adult Cardiac Surgery Department of the Ramón y Cajal University Hospital of Madrid
- Assistant Physician of the Adult Cardiac Surgery Service of the Son Espases University Hospital of Palma de Mallorca
- Assistant Physician of the Cardiac Surgery Department of the Fundación Jiménez Díaz University Hospital
- PhD from the University of Alcalá de Henares in Health Sciences
- Master's Degree in Cardiovascular Emergencies, University of Alcalá de Henares
- Master's Degree in Cardiovascular Emergencies at the University of Alcalá de Henares

Dr. Del Castillo Medina, Roberto

- Faculty Area Specialist of the Cardiology Service, University Hospital Fundación Alcorcón Madrid

Dr. García Rodríguez, Daniel

- Cardiology Resident at the Puerta de Hierro University Hospital
- Participation in various cardiology research projects at Puerta de Hierro University Hospital
- Graduate in Medicine from the Autonomous University Madrid

Dr. Domínguez Rodríguez, Fernando

- Specialist in Cardiology at the Puerta De Hierro University Hospital
- Clinical Research at the Puerta De Hierro University Hospital
- Degree in Medicine from the Complutense University of Madrid
- PhD in Medicine and Surgery from the Autonomous University of Madrid

Dr. López Menéndez, José

- Specialist in Adult Cardiac Surgery, Ramón y Cajal University Hospital
- Cardiac Surgery Specialist. Oviedo University Hospital
- Clinical Professor in the Department of Surgery, University of Alcalá de Henares
- Resident tutor. Residency training in cardiovascular surgery. Gregorio Marañón Hospital, Madrid
- Faculty Area Specialist Asturias Central University Hospital
- Doctor in the Official Postgraduate Program in Health Sciences at the Complutense University of Madrid. University of Oviedo
- Degree in Medicine and Surgery, University of Oviedo
- Extraordinary award at the end of his degree. University of Oviedo
- Master's Degree in Research Methodology in Health Sciences. Autonomous University of Barcelona
- "Innovations in Cardiac Surgery" Master's Degree Scuola Superiore Sant'Anna, University of Pisa, Italy
- Postgraduate in Statistics and Health Sciences City. Autonomous University of Barcelona
- Specialization in Cardiovascular Surgery. Gregorio Marañón General University Hospital
- Extraordinary award at the end of his degree. University of Oviedo

Dr. Pedraz Prieto, Álvaro

- Faculty Area Specialist in General Surgery, Gregorio Marañón General University Hospital
- Faculty Area Specialist in General Surgery Montepríncipe Hospital
- Collaborating Physician in the practical teaching of the Department of Surgery of the School of Medicine, Complutense University of Madrid
- Degree in Medicine. University of Salamanca
- Master's Degree in Research Methodology in Health Sciences. University of Salamanca
- Specialist in Cardiovascular Surgery, General University Hospital

Dr. Miguelena Hycka, Javier

- Specialist in Adult Cardiac Surgery. Ramón y Cajal University Hospital
- Tutor of Surgical Residents, Ramón y Cajal University Hospital
- Lecturer in the Master's Degree in Cardiovascular Emergencies, University of Alcalá
- Lecturer in Master's Degree in pacemakers, resynchronizers and cardiac defibrillation, University of Alcalá
- PhD in Medicine and Surgery, University of Zaragoza
- Degree in Medicine and Surgery from the University of Zaragoza
- Master's Degree in Research Methodology in Health Sciences. Autonomous University of Barcelona
- Diploma in Design and Statistics in Health Sciences. Autonomous University of Barcelona
- Diploma of Advanced Studies, Faculty of Medicine University of Alcalá
- Specialization in Cardiovascular Surgery. Ministry of Health and Consumption

Dr. Vaqueriza Cubillo, David

- Faculty Area Specialist of Clinical Cardiology and Multidisciplinary Unit of Heart Failure, Infanta Leonor Hospital Madrid
- Specialist of the Cardiology Unit, Beata María Ana de Jesús Hospital, Madrid
- Degree in Medicine from the Complutense University of Madrid
- Resident in Cardiology at 12 de Octubre University Hospital. Madrid
- Online Master's Degree in Cardiology "Professor in Cardiology" by the Miguel Hernández University. Valencia

Dr. De Cortina Camarero, Cristina

- Cardiology Faculty Area Specialist, Hospital Infanta Leonor Madrid
- Assistant Medical Specialist in the Cardiology Service, Gregorio Marañón Hospital, Madrid
- Research Grant from the Noninvasive Cardiology Area of the Cardiology Service, Gregorio Marañón Hospital Madrid
- Degree in Medicine and Surgery at University of the Basque Country
- Residency and specialization in Cardiology at the Gregorio Marañón General University Hospital Madrid
- Doctorate in Cardiac Medicine at the Complutense University of Madrid

Dr. Hernando Marrupe, Lorenzo

- Faculty Area Specialist of the Cardiology Service, Alcorcón Foundation University Hospital Madrid
- Resident Cardiology Intern at the Cardiology Department, San Carlo Clinical Hospital . Madrid
- Fellowship of the Spanish Society of Cardiology for post-residency research training in Interventional Cardiology
- Degree in Medicine and Surgery from the University of Alcalá. Madrid
- PhD in Cardiology from the Complutense University of Madrid.
- Postgraduate Master's Degree in Acute Cardiac Care, San Antonio Catholic University and Spanish Society of Cardiology Murcia

Dr. Pérez-Caballero Martínez, Ramón

- Assistant of Children's Cardiovascular Surgery, Gregorio Marañón General University Hospital
- Assistant at the Children's Cardiovascular Surgery Unit (Dr. R. Greco), Sanitas La Zarzuela Hospital
- Assistant at the Children's Cardiovascular Surgery Unit (Dr. R. Greco), Sanitas La Moraleja Hospital
- Assistant at the Children's Cardiovascular Surgery Unit (Dr. R. Greco), Nisa Pardo de Aravaca Hospital
- Assistant at the Children's Cardiovascular Surgery Unit (Dr. R. Greco), Quirón Pozuelo Hospital
- Assistant in Children's Cardiac Surgery Pediatric Heart Institute, 12 de Octubre University Hospital
- PhD in Surgery from the Complutense University of Madrid
- Degree in Medicine and Surgery from the Faculty of Medicine, University of Santander, University of Cantabria
- Specialist in Cardiovascular Surgery, Gregorio Marañón General University Hospital
- Honorary Collaborator of the Department of Surgery I at the Complutense University
- Diploma of Advanced Studies. Synchronized ventricular assistance
- He has numerous publications in the area of cardiac surgery and transplantation in pediatrics.

Dr. García Magallón, Belén

- Specialist in Cardiology at the Puerta De Hierro University Hospital
- Cardiology Resident at the University Hospital of Guadalajara
- Degree in Medicine from the Catholic University
- Master's Degree in Diagnostic Imaging in Cardiology at the Catholic University of Murcia

Dr. Campuzano Ruíz, Raquel

- Head of Cardiac Rehabilitation. Cardiology Service, Alcorcón Foundation University Hospital. Madrid
- President Elect of the Cardiovascular Risk and Cardiac Rehabilitation Section of the Spanish Society of Cardiology
- Coordinator of the Master in Cardiovascular Prevention and Cardiac Rehabilitation, Menéndez Pelayo Intenational University, Spanish Society of Cardiology
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Master's Degree in Cardiology from the Spanish Society of Cardiology, Miguel Hernández University. Elche
- Doctor in the Official Postgraduate Program in Health Sciences at the Complutense University of Madrid, Alcalá University, Madrid

Dr. Juárez Fernández, Miriam

- Faculty Area Specialist of the Coronary Care Unit, Gregorio Marañón University Hospital Madrid
- 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"
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- PhD at the Faculty of Medicine from the Complutense University of Madrid
- Speciality in Cardiology at the Gregorio Marañón General University Hospital. Madrid

Dr. Martínez Losas, Pedro

- Faculty Area Specialist of the Cardiology Service, Infanta Leonor University Hospital Madrid
- Fellow of the Ischemic Heart Disease and Acute Cardiovascular Care Section of the SEC, La Paz University Hospital. Madrid
- Degree in Medicine from the University of Alcalá de Henares. Madrid
- Specialist in Cardiology at the San Carlos Clinical Hospital in Madrid
- Sub-specialty in Acute Cardiac Care with a training grant from the SEC in the Acute Cardiovascular Care Unit at La Paz University Hospital Madrid
- Expert in Atrial Fibrillation from the University of Santiago de Compostela. Galicia

Dr. Pastor Fuentes, Agustín

- Faculty Area Specialist in Cardiology Head of Clinical and Interventional Cardiology Section, University Hospital of Getafe Madrid
- Associate Professor of Medicine and Cardiology at the European University of Madrid
- Degree in Medicine from the University of Alicante. Valencia
- PhD in Medicine from the Complutense University of Madrid
- Master's Degree in Interventional Heart Rhythmia from the University of Alcalá Henares. Madrid

Dr. González Manzilla, Ana

- Assistant in Cardiology at the Gregorio Marañón University Hospital. Madrid
- Cardiovascular Disease Network Research, Gregorio Marañón Biomedical Research Foundation. Madrid
- Member of the Cardiovascular Research Network, Carlos III Health Institute. Madrid
- Degree in Medicine. from the University of Castilla La Mancha
- Resident in Cardiology at 12 de Octubre University Hospital. Madrid
- Doctorate in Risk Stratification in Acute Non-Massive Pulmonary Thromboembolism from the Complutense University of Madrid

Dr. Martin, Miren

- Cardiovascular Surgery Specialist. Ramón y Cajal University Hospital
- Resident Intern. Ramón y Cajal University Hospital
- PhD in Medicine and Surgery, University of the Basque Country
- Master's Degree in Minimally Invasive Cardiac Surgery. University of Malaga
- Master's Degree in Cardiovascular Emergencies. University of Alcalá
- Specialization in Clinical Research Methodology for Residents. University of Alcalá
- Specialist in Cardiovascular Surgery Ramón y Cajal University Hospital

Dr. Toquero Ramos, Jorge

- Area Specialist in the Cardiology Service of the Puerta de Hierro Hospital, Madrid
- Graduate in Medicine and Surgery from the University of Valladolid
- Cum Laude Doctor in Medicine from the Autonomous University of Madrid
- Specialist in Cardiology through Residency post at the Puerta De Hierro Hospital of Madrid
- Fellowship in Clinical Electrophysiology at the Arrhythmia Unit of the Cardiovascular Center of OLV Aalst Hospital, Belgium
- Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at the Gregorio Marañón Hospital and Complutense University of Madrid

Dr. García-Izquierdo Jaén, Eusebio

- Area specialist in the Arrhythmia Unit of the Puerta de Hierro University Hospital
- Clinical Cardiologist at the Hospital La Luz - Quirónsalud in Madrid
- AORTASANA Project Clinical Researcher
- Degree in Medicine from the Complutense University of Madrid

Dr. Aguilera Agudo, Cristina

- Area Specialist in the Cardiology Service of the Puerta de Hierro Hospital. of Madrid
- Personal Physician of Continuous Care at the University Hospital of Guadalajara
- Degree in Medicine and Surgery at the University of Granada
- Postgraduate Certificate in Statistics in Health Sciences from the Autonomous University of Barcelona

Dr. Cobo Marcos, Marta

- Head of the Heart Failure Unit at the Puerta de Hierro Hospital
- Promoter and Coordinator of the working group on cardiorenal syndrome and treatment of congestion in heart failure of the Heart Failure Association of the Spanish Society of Cardiology
- Area Specialist in Cardiology at the Puerta de Hierro Hospital
- Area Specialist in Cardiology at the Carlos III Hospital and Carlos III Foundation Hospital Alcorcón
- Degree in Medicine and Surgery from the Complutense University of Madrid

Dr. Vilches Soria, Silvia

- Area Specialist at the Family Cardiopathies Unit of the Gregorio Marañón University Hospital
- Co-researcher in the national multicenter PACED project: Etiological diagnosis of advanced conduction disorders
- Clinical-Teaching Collaborator at the Autonomous University of Madrid
- Degree in Medicine from the Autonomous University of Madrid
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- Specialist Via MIR in Cardiology at the Puerta De Hierro University Hospital

Dr. Parra Esteban, Carolina

- Area Specialist at the Acute Cardiac Care Unit of the Puerta de Hierro University Hospital
- Area Specialist in Cardiology at the Severo Ochoa University Hospital
- Lecturer in the Simulation Course on the Comprehensive Management of the Patient in Cardiogenic Shock organized by the Cardiology Department of the Puerta de Hierro University Hospital and the Foundation for Biomedical Research of the Puerta de Hierro University Hospital
- Degree in Medicine from the Autonomous University Madrid
- Specialist in Cardiology Via MIR at the Puerta De Hierro University Hospital

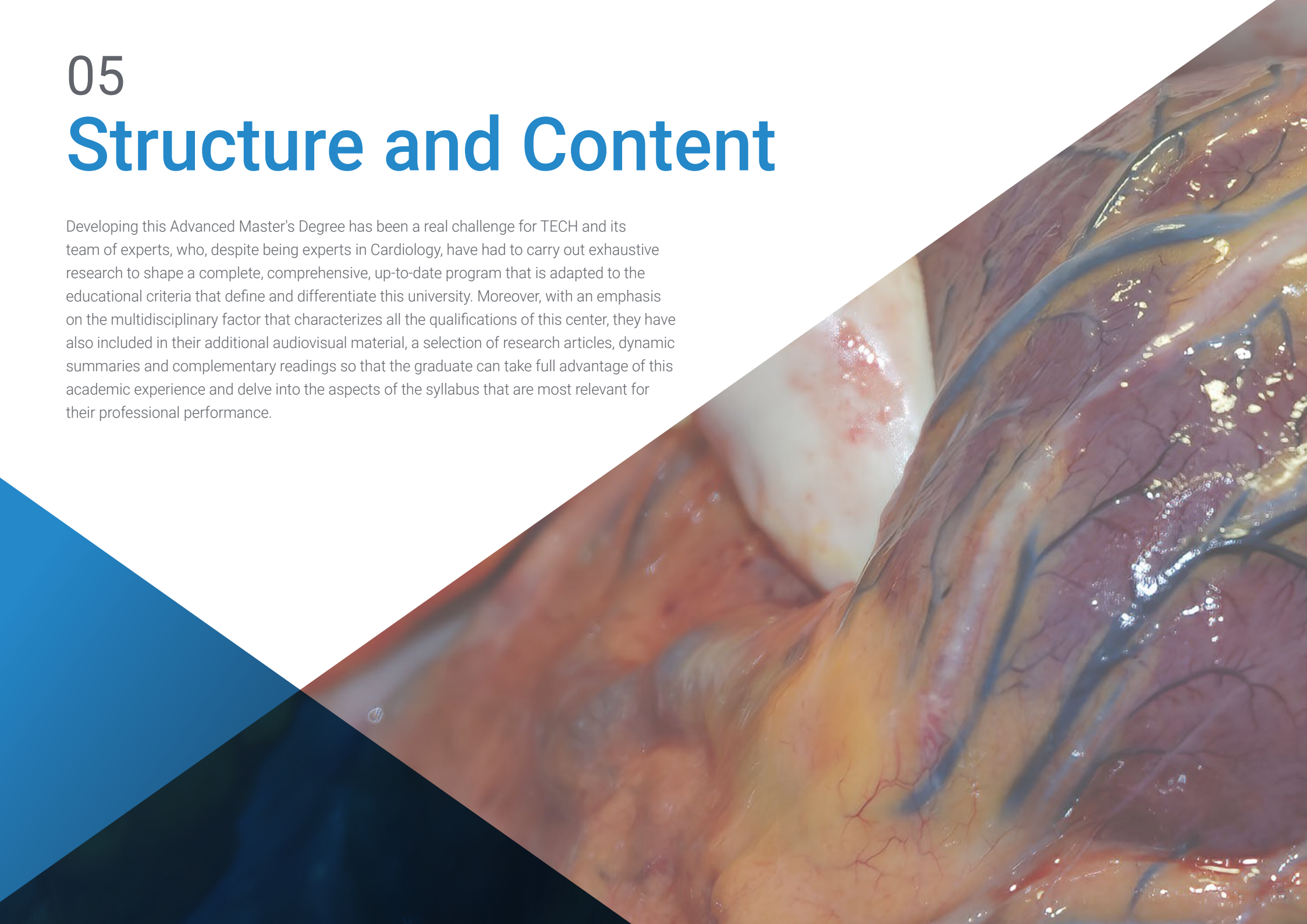
Dr. Sánchez García, Manuel

- Area Specialist in the Electrophysiology and Cardiac Stimulation Unit of the Cardiology Service of the University Health Care Complex of Salamanca
- General Cardiologist at the University Hospital El Escorial
- Cardiologist in Pacemaker, ICD and Tilt Test consultation at Montepríncipe Hospital, Madrid
- Degree in Medicine, Complutense University of Madrid
- Master's Degree in Diagnostic and Therapeutic Cardiac Electrophysiology at San Pablo CEU University

05

Structure and Content

Developing this Advanced Master's Degree has been a real challenge for TECH and its team of experts, who, despite being experts in Cardiology, have had to carry out exhaustive research to shape a complete, comprehensive, up-to-date program that is adapted to the educational criteria that define and differentiate this university. Moreover, with an emphasis on the multidisciplinary factor that characterizes all the qualifications of this center, they have also included in their additional audiovisual material, a selection of research articles, dynamic summaries and complementary readings so that the graduate can take full advantage of this academic experience and delve into the aspects of the syllabus that are most relevant for their professional performance.



You will master, in a very short time, the techniques of percutaneous and surgical revascularization based on the latest developments in cardiac surgery"

Module 1. Anatomy and Pathophysiology of the Cardiovascular System

1.1. Embryology
1.2. Anatomy
  1.2.1. Cardiac Cavities
  1.2.2. Inter-Atrial and Inter-Ventricular Septum
  1.2.3. Heart Valves
1.3. Biochemistry of the Heart
  1.3.1. Metabolic Regulation
  1.3.2. Regulation of Oxygen Consumption
  1.3.3. Plasma Lipoproteins
1.4. Conduction System
1.5. Coronary Anatomy and Coronary Pathophysiology
1.6. Large Vessels and Peripheral Vascular System
1.7. Physiology of the Cardiovascular Apparatus
1.8. Anatomo-Physiology of Pulmonary Circulation
1.9. Hemostasis and Blood Coagulation
1.10. Update on Cardiovascular Pharmacology

Module 2. Extracorporeal Circulation ECC

2.1. The History of ECC
2.2. General Principles of the ECC
2.3. ECC Components
  2.3.1. Mechanical Pumps
  2.3.2. Oxygenators
  2.3.3. Heat Exchanger
  2.3.4. Circuits and Filters
2.4. Hypothermia
  2.4.1. Physiology of Hypothermia
  2.4.2. pH Control
  2.4.3. Techniques of Hypothermia
2.5. Methods of Myocardial Protection
  2.5.1. Basic Principles of Cardioplegia
  2.5.2. Types of Cardioplegia
2.6. Secondary Effects of ECC
  2.6.1. Coagulation Alterations
  2.6.2. Pulmonary Alterations
  2.6.3. Neurological Alterations
  2.6.4. Renal Alterations
  2.6.5. Inflammatory Response
2.7. Monitoring During ECC
  2.7.1. Cardiovascular Monitoring
  2.7.2. Safety Devices
  2.7.3. Heat Exchanger
  2.7.4. Blood Gases
  2.7.5. Pressure
  2.7.6. Brain Saturation
  2.7.7. Flows
2.8. Cannulation Techniques
  2.8.1. Types of Cannulas
  2.8.2. Access for Cannulation
  2.8.3. Special Situations
2.9. Cerebral Perfusion

Module 3. Preoperative Care

3.1. Preoperative Optimization
  3.1.1. Risk Assessment
  3.1.2. Nutritional Status
  3.1.3. Anemia
  3.1.4. Diabetes Mellitus
  3.1.5. ATB Prophylaxis
3.2. Intraoperative
  3.2.1. Monitoring
  3.2.2. Anesthetic Induction and Maintenance
  3.2.3. Fluid Use
  3.2.4. Pulmonary Hypertension

3.3. Cardiovascular System
- 3.3.1. Volemia and Contractility
- 3.3.2. Postoperative AMI
- 3.3.4. Cardiopulmonary Arrest and Cardiopulmonary Resuscitation

3.4. Low-Energy Expenditure Syndrome
- 3.4.1. Monitoring and Diagnosis
- 3.4.2. Treatment

3.5. Respiratory System
- 3.5.1. Postoperative Changes in Pulmonary Function
- 3.5.2. Ventilator Management
- 3.5.3. Pulmonary Complications

3.6. Kidney Function
- 3.6.1. Kidney Pathophysiology
- 3.6.2. Predisposing Factors for Kidney Failure
- 3.6.3. Prevention of Kidney Failure
- 3.6.4. Treatment of Kidney Failure

3.7. Nervous System. Neurological Damage
- 3.7.1. Types of Neurological Damage
- 3.7.2. Risk Factors
- 3.7.3. Etiology and Prevention
- 3.7.4. Neuropathy in Critically Ill Patients

3.8. Hematologic Complications
- 3.8.1. Postoperative Bleeding
- 3.8.2. Diagnosis of Coagulopathies
- 3.8.3. Prevention of Bleeding
- 3.8.4. Treatment

3.9. Infections
- 3.9.1. Pneumonia Associated with Mechanical Ventilation
- 3.9.2. Infection of Surgical Wounds
- 3.9.3. Infections Associated with Catheter Devices
- 3.9.4. Antibiotic Prophylaxis

3.10. Optimization of Blood Derivative Transfusion

Module 4. Ischemic Heart Disease

4.1. Myocardial Ischemia and Myocardial Infarction
- 4.1.1. Pathophysiology of Atheromatous Plaque
- 4.1.2. Angina
- 4.1.3. AMI

4.2. Diagnosis
- 4.2.1. Clinical symptoms
- 4.2.2. Electrocardiographic Criteria
- 4.2.3. Enzymatic Modifications
- 4.2.4. Image
- 4.2.5. Definition of AMI

4.3. Natural History and Prevention
- 4.3.1. Mortality of AMI
- 4.3.2. Prevention of Ischemic Heart Disease

4.4. Clinical Decisions
- 4.4.1. Heart Team
- 4.4.2. Analysis of Clinical Practice Guidelines

4.5. AMI Management
- 4.5.1. AMI Code
- 4.5.2. Thrombolytic Treatment

4.6. Percutaneous Treatment
- 4.6.1. Complications
- 4.6.2. Results

4.7. Surgical Management
- 4.7.1. Grafts
- 4.7.2. Anastomosis
- 4.7.3. Without ECC
- 4.7.4. MIDCAB

4.8. Surgical Complications from AMI
- 4.8.1. Ischemic Mitral Insufficiency
- 4.8.2. VIC
- 4.8.3. Free Wall Breakage
- 4.8.4. Ventricular Aneurysm

4.9. Combined Coronary Surgery
4.10. Relevant Studies in Ischemic Heart Disease

Module 5. Valvular Pathology

5.1. Etiopathogenesis.
5.2. Valvular Heart Team Specific Units
5.3. Types of Valve Prostheses
- 5.3.1. Historical Evolution of Valve Prostheses
- 5.3.2. Mechanical Prostheses
- 5.3.3. Biological Prostheses
- 5.3.4. Homograft
- 5.3.5. Xenografts
- 5.3.6. Autografts

5.4. Mitral Valve
- 5.4.1. Anatomy and Function
- 5.4.2. Pathophysiology
- 5.4.3. Replacement and Repair Techniques

5.5. Tricuspid Valve
- 5.5.1. Anatomy and Function
- 5.5.2. Pathophysiology
- 5.5.3. Replacement and Repair Techniques

5.6. Aortic Valve
- 5.6.1. Anatomy and Function
- 5.6.2. Pathophysiology
- 5.6.3. Replacement and Repair Techniques

5.7. Pulmonary Valve
- 5.7.1. Anatomy and Function
- 5.7.2. Pathophysiology
- 5.7.3. Replacement and Repair Techniques

5.8. Minimally Invasive Surgery
5.9. Results of Valvular Surgery Research
5.10. Endocarditis
- 5.10.1. Etiology
- 5.10.2. Indications
- 5.10.3. Risk Factors
- 5.10.4. Treatment

Module 6. Pathology of the Aorta

6.1. Anatomy and Function of the Aortic Root
6.2. Pathology and Treatment of the Aortic Root
6.3. Aneurysm of the Thoracic Aorta
- 6.3.1. Etiopathogenesis
- 6.3.2. Natural History
- 6.3.3. Treatment

6.4. Thoracoabdominal Aneurysm
6.5. Acute Aortic Syndrome
- 6.5.1. Classification
- 6.5.2. Diagnosis

6.6. Surgical Treatment of Acute Aortic Syndrome
6.7. Adjuvant Techniques in the Surgical Treatment of Acute Aortic Syndrome
6.8. Surgery of the Aortic Arch
6.9. Percutaneous Treatment
6.10. Aortitis

Module 7. Congenital Heart Disease

7.1. General Physiology of Congenital Heart Disease
- 7.1.1. Major Syndromes
- 7.1.2. Palliative Techniques

7.2. Patent Ductus Arteriosus
- 7.2.1. Aortopulmonary Window
- 7.2.2. Fistula of the Sinus of Valsalva
- 7.2.3. Aortoventricular Tunnel

7.3. Obstructions to Systemic Flow
- 7.3.1. Aortic Subvalvular Stenosis
- 7.3.2. Aortic Valve Stenosis
- 7.3.3. Supravalvular Aortic Stenosis and Aortic Coarctation
- 7.3.4. Interruption of Aortic Arch

7.4. Atrial Septal Defect and Ventricular Septal Defect
- 7.4.1. Atrioventricular Canal
- 7.4.2. Truncus Arteriosus

7.5. Tetralogy of Fallot
- 7.5.1. Pulmonary Atresia with VSD and MAPCAS

7.6. Transposition of the Main Arteries Double Outlet Right Ventricle

7.7. Hypoplastic Left Heart Syndrome
- 7.7.1. Three-Stage Management of Uni-Ventricular Physiology

7.8. Pulmonary Venous Return Anomalies
- 7.8.1. Total and Partial Anomalous Pulmonary Venous Return
- 7.8.2. Heterotaxia

7.9. Congenitally Corrected Transposition of the Great Arteries

7.10. Vascular Rings. Coronary Abnormalities

Module 8. Treatment of Other Cardiac Pathologies, Transcatheter Valve Implantation and Concomitant Conditions

8.1. Surgical Management of Cardiac and Great Vessel Trauma
- 8.1.1. Blunt
- 8.1.2. Open

8.2. Pericardial Diseases
- 8.2.1. Pericardial Effusion and Tamponade
- 8.2.2. Constrictive Pericarditis
- 8.2.3. Cysts and Tumors

8.3. Cardiac Tumors

8.4. Pulmonary Embolism
- 8.4.1. Pathophysiology, Prevention and Treatment
- 8.4.2. Pulmonary Thromboendarterectomy

8.5. Ventricular Assists and ECMO

8.6. Cardiac Transplantation
- 8.6.1. History of the Cardiac Transplantation
- 8.6.2. Surgical Techniques.
- 8.6.3. Donor and Recipient Selection
- 8.6.4. Immunosuppression

8.7. Transcatheter Valvular Treatment of the Aortic Valve

8.8. Transcatheter Valvular Treatment of the Mitral Valve
- 8.8.1. Transcatheter Mitral Valve Implantation
- 8.8.2. Transapical Neo-String Implantation

8.9. Cardiac Surgery and Concomitant Diseases
- 8.9.1. Preoperative Assessment
- 8.9.2. Fragility for
- 8.9.3. Renal Insufficiency
- 8.9.4. Respiratory Failure
- 8.9.5. Digestive Pathology
- 8.9.6. Coagulation Disorders
- 8.9.7. Pregnancy

Module 9. New Technologies and Imaging Techniques Statistics

9.1. New Technologies in Cardiac Surgery
- 9.1.1. New Polymer Prostheses
- 9.1.2. Vest/Duragraft
- 9.1.3. 3D Printing
- 9.1.4. Augmented Reality
- 9.1.5. Robotics

9.2. Transthoracic Echocardiography

9.3. Transesophageal Echocardiogram

9.4. Imaging Techniques in Cardiac Pathology
- 9.4.1. Cardiac CT
- 9.4.2. Cardioresonance
- 9.4.3. Perfusion Studies
- 9.4.4. PET/CT

9.5. Statistics I for Surgeons
  9.5.1. Sample Collection
  9.5.2. Graphic Representation
9.6. Statistics II for Surgeons
  9.6.1. Statistical Inference
  9.6.2. Proportion Comparison
  9.6.3. Comparison of Averages
9.7. Statistics III for Surgeons
  9.7.1. Regression Analysis
  9.7.2. Linear Regression
  9.7.3. Logistic Regression
  9.7.4. Survival Studies
9.8. Care Management
  9.8.1. Quality Criteria
  9.8.2. Records and Databases
  9.8.3. Criteria for the Timing of Cardiovascular Interventions
9.9. Research Methodology
  9.9.1. Design
  9.9.2. Ethics
  9.9.3. Critical Reading of Articles
  9.9.4. Evidence-Based Medicine
9.10. Past, Present and Future of Cardiovascular surgery

Module 10. Clinical Presentation of Coronary Syndromes (SCA) and Classification NSTE-ACS 1: Epidemiology, Pathophysiology and Classification

10.1. Forms of Presentation of Coronary Heart Disease Chronic Coronary Syndromes And Acute
10.2. Operational Classification of ACS Based on ECG, NSTE-ACS1 Epidemiology
10.3. Pathophysiology and Correlation with Anatomic Pathology
10.4. Unstable Angina and Non-Q AMI, Clinical Features
10.5. ECG and NSTE-ACS
10.6. Complementary Diagnostic Laboratory Tests and RXT in NSTE-ACS
10.7. Risk Stratification, Thrombotic Risk Scales
10.8. Risk Stratification, Hemorrhagic Risk Scales
10.9. Variant Angina and Coronary Vasospasm Clinical Features
10.10. Vospasm Provocation Tests Treatment and Prognosis of Vasospasm

Module 11. NSTE-ACS 2: Imaging and Ischemia Detection Tests

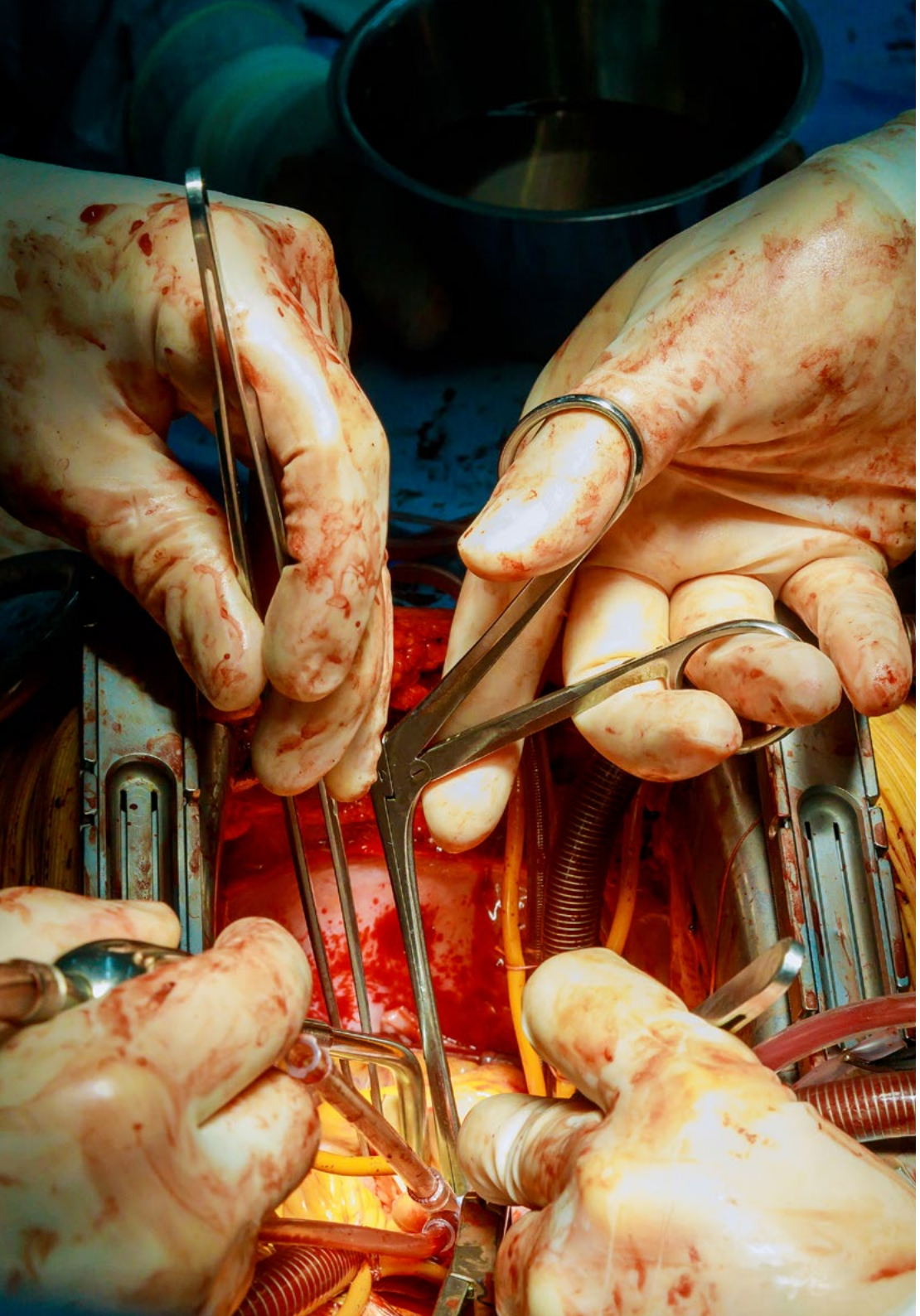
11.1. Differential Diagnosis of TD in the Emergency Department
11.2. Imaging Protocols in Emergency Department TD Units Assessment and Algorithm for the Diagnosis of Patients with TD in the Emergency Department
11.3. Value of Transthoracic Echocardiography in the Assessment of the Patient with Suspected NSTE-ACS Use of POCUS
11.4. Ergometry and Stress Echo/Stress Echo in the Patient with TD in the Emergency Department Indications and Technique
11.5. Role of MRI in NSTE-ACS and Patients with Chest Pain Indications and Technique
11.6. Anatomical Approach vs. Functional in the Diagnostic Assessment of the Patient with Chest Pain
11.7. Long-Term Follow-Up Using Imaging Techniques

Module 12. NSTE-ACS 3: Medical and Revascularization Treatment

12.1. General and Monitoring Measures
12.2. Anti-Anginal Drugs: Beta Blockers
12.3. Anti-Anginal Drugs: Nitrates and Calcium Antagonists
12.4. Platelet Aggregation Inhibitors Which Ones and For How Long?
12.5. Anticoagulant Drugs Which Ones, How Much and Why?
12.6. Indications for Coronary Angiography and Revascularization
12.7. When Is Surgical Revascularization Indicated and When Is Percutaneous Revascularization Indicated?
12.8. Percutaneous Revascularization Techniques
12.9. Surgical Revascularization Techniques

Module 13. NSTE-ACS 13: Clinical Picture, Presentation and Pre-Hospital and Emergency Assessment

13.1. Clinical Presentations of NSTE-ACS
13.2. Assessment of the Patient with NSTE-ACS in the Pre-Hospital Phase and in the Emergency Department (Clinical and Physical Examination) Initial Risk Stratification
13.3. ECG in the Acute Phase of NSTE-ACS and Correlation with Coronary Anatomy
13.4. ST-Elevation ECG: Differential Diagnosis
13.5. Evolving ECG Pattern in NSTE-ACS
13.6. General Treatment Measures and Initial Monitoring, Why Is It Important?
13.7. Initial Pharmacological Treatment of NSTE-ACS: Oxygen Therapy, Nitrates, Beta-Blockers
13.8. Pre-Hospital Antithrombotic Therapy: When and with What?
13.9. Indications for Coronary Reperfusion: The Problem of Timing



Module 14. NSTE-ACS 14. Patient Management in the Hospital. Coronary Unit

14.1. Role of the Coronary Care Unit, the Value of Monitoring and General Early Treatment Measures
14.2. Patient Stratification and Risk Scales
14.3. Complementary Laboratory Tests
14.4. Lipid-Lowering Drugs and Treatment Goals
14.5. Antianginal Drugs in NSTE-ACS
14.6. Platelet Antiplatelet Aggregation in NSTE-ACS
14.7. Anticoagulation Indications Anticoagulants
14.8. Complications of NSTE-ACS: Chronic Heart Failure (CHF)
14.9. Complications of NSTE-ACS: Cardiogenic Shock, Medical Treatment and Mechanical Support
14.10. Mechanical Complications of NSTE-ACS: Cardiac Rupture, VSD and MI

Module 15. NSTE-ACS 3: TTE and Other Imaging Tests in Acute Patient Assessment and in the Hospital Phase

15.1. CXR in NSTE-ACS
15.2. Value of Transthoracic Echocardiography in the Patient with NSTE-ACS
15.3. Transthoracic Echocardiographic Assessment of Mechanical Complications of NSTE-ACS
15.4. Echocardiographic Assessment of the Patient with Heart Failure or Cardiogenic Shock
15.5. Usefulness of Imaging Techniques in the Prognostic Assessment of the Patient with NSTE-ACS Diagnostic Assessment of Residual Ischemia and Myocardial Viability
15.6. New Techniques for Myocardial Deformation in NSTE-ACS
15.7. MINOCA Causes and Prognosis
15.8. Usefulness of MRI in Patients With Myocardial Damage Without Epicardial Coronary Disease
15.9. Assessment of Myocardial Perfusion by Contrast Echocardiography and Correlation with Angiographic Findings

Module 16. NSTE-ACS 4: Limitation of Infarct Size Reperfusion Therapies

16.1. Myocardial Necrosis and Ischemia, the Problem of Ischemia Time
16.2. Strategies to Decrease Infarct Size: Fibrinolysis vs Primary Angioplasty
16.3. Fibrinolysis, Advantages, Disadvantages and Protocols
16.4. Primary Angioplasty Technique and Requirements
16.5. Stents: Types and Results Thrombus Extractors?
16.6. Antiplatelet and Anticoagulation Treatment During PCI
16.7. Long-Term Anti-Aggregation Treatment
16.8. The Problem of Antiplatelet Treatment in Patients Who Also Take Anticoagulant Drugs Protocols
16.9. Hemodynamic Support During Primary Angioplasty Available Methods and Results
16.10. Infarction Code Programs and Regional Reperfusion Networks

Module 17. ACS Secondary Prevention. Cardiac Rehabilitation Programs

17.1. Optimization of Medical Treatment after ACS
17.2. Diet and Obesity Management
17.3. Prescription and Types of Exercise
17.4. Control of Arterial Hypertension before and after ACS
17.5. Dyslipidemia Control Before and After ACS
17.6. Smoking Control
17.7. Diagnosis and Management of Diabetes in Ischemic Heart Disease
17.8. Cardiac Rehabilitation Programs: Evidence, Phases, Components and Process of Care
17.9. Telemedicine in Cardiac Rehabilitation
17.10. Continuity of Care after ACS and Cardiac Rehabilitation PHASE III Cardiac Rehabilitation

Module 18. Arrhythmias. Fundamental Concepts

18.1. Physiology
  18.1.1. Special Characteristics of Myocardial Cells
  18.1.2. Action Potential
  18.1.3. Main Ionic Currents Involved
18.2. Genetics of Arrhythmias
18.3. Cardiac Conduction System
  18.3.1. Sinus Node and AV Node
  18.3.2. His-Purkinje System
18.4. Arrhythmias Mechanisms
  18.4.1. Automatism
  18.4.2. Triggered Activity
  18.4.3. Re-Entry
  18.4.4. Micro-Entry
18.5. Antiarrhythmic Drugs
  18.5.1. Type I:
  18.5.2. Type I:
  18.5.3. Type III:
  18.5.4. Type IV:
18.6. Basic Diagnostic Techniques Used in Arrhythmias
  18.6.1. Holter
  18.6.2. Tilt Test
  18.6.3. Pharmacological Tests
  18.6.4. Insertable Holter
  18.6.5. Wearables and Other Devices
18.7. Common Procedures Performed for the Diagnosis and Treatment of Arrhythmias
  18.7.1. EEF and Ablation
  18.7.2. Electroanatomical Mapping Systems Browsers
18.8. Cardiac Anatomy Focused on Arrhythmias
18.9. Radiological Anatomy
18.10. Organization and Operation of Arrhythmia Units

Module 19. Bradyarrhythmias

19.1. Bradyarrhythmia
19.2. Types of Bradyarrhythmias
19.3. Mechanisms/Physiopathology of Bradyarrhythmias
19.4. Diagnostic Studies for Bradyarrhythmias
19.5. Sinus Node Disease
19.6. AV Blockages
19.7. Syncope
  19.7.1. Causes of Syncope
  19.7.2. Syncope Mechanisms
  19.7.3. Diagnostic Study and Differential Diagnosis
19.8. Indication for Pacemaker Implantation Indications for Transient PM Implantation
  19.8.1. Sinus Dysfunction
  19.8.2. AV Blockages
19.9. EEF Study of Bradyarrhythmias

Module 20. Supraventricular Tachyarrhythmias

20.1. Supraventricular Tachycardia
20.2. Types of Supraventricular Tachyarrhythmias Clinical Differential Diagnosis
20.3. Acute Management of Supraventricular Tachycardia. View from the Emergency Department
  20.3.1. Clinical Presentation
  20.3.2. Complementary Tests
  20.3.3. Therapeutic Maneuvers and Pharmacological Treatment
  20.3.4. Discharge Treatment
20.4. Chronic Management of Supraventricular Tachycardia View from the Consultation
20.5. Pharmacological Treatment of Supraventricular Tachycardias
20.6. Electrophysiological Study of Supraventricular Tachycardia
  20.6.1. Indications
  20.6.2. Description and Maneuvers
20.7. Nodal Reentrant Tachycardia
  20.7.1. Epidemiology
  20.7.2. Clinical Peculiarities
  20.7.3. Electrophysiological Study Findings
  20.7.4. Ablation
20.8. AV Reentrant Tachycardia (Accessory Pathway)
  20.8.1. Epidemiology
  20.8.2. Clinical Peculiarities
  20.8.3. Electrophysiological Study Findings
  20.8.4. Ablation
20.9. Common Atrial Flutter
  20.9.1. Epidemiology
  20.9.2. Clinical Peculiarities
  20.9.3. Electrophysiological Study Findings
  20.9.4. Ablation
20.10. Other Macroreentrant Tachycardias
20.11. Focal Atrial Tachycardia
  20.11.1. Epidemiology
  20.11.2. Clinical Peculiarities
  20.11.3. Electrophysiological Study Findings
  20.11.4. Ablation

Module 21. Ventricular Tachyarrhythmias

21.1. Ventricular Tachycardias
  21.1.1. Mechanisms and Pathogenesis of Ventricular Tachycardias
  21.1.2. Types of Ventricular Tachycardias
21.2. Idiopathic Ventricular Tachycardia
21.3. Clinical and Electrocardiographic Diagnosis
21.4. Electrocardiographic Differential Diagnosis of Wide QRS Tachycardias
21.5. Acute Management of Ventricular Tachycardia. Vision from the Emergency Department and the Critically Ill Patient
  21.5.1. Clinical Presentation
  21.5.2. Complementary Tests
  21.5.3. Therapeutic Maneuvers and Pharmacological Treatment
  21.5.4. Discharge Treatment
21.6. Chronic Management of Ventricular Tachycardia View from the Consultation
21.7. Pharmacological Treatment of Ventricular Tachycardias
21.8. Electrophysiological Study and Ablation of Ventricular Tachycardia

21.9. Ventricular Extrasystole
- 21.9.1. Mechanisms of Genesis of Ventricular Extrasystole
- 21.9.2. Clinical Management
- 21.9.3. Therapeutic Strategies

21.10. Ventricular Extrasystole Study and Ablation

Module 22. Devices (Pacemaker, ICD and Resynchronizer)

22.1. Pacemakers
- 22.1.1. How a Pacemaker Works
- 22.1.2. Indications for Pacemaker Implantation

22.2. Technique for Pacemaker Implantation
- 22.2.1. Venous Cannulation
- 22.2.2. Making of Surgical Pocket
- 22.2.3. Ventricular Electrode Implantation
- 22.2.4. Atrial Electrode Implantation

22.3. Basic Programming of Pacemakers
- 22.3.1. Post-Implant Discharge Programming
- 22.3.2. Follow-Up Consultation Protocol

22.4. ICD
- 22.4.1. Operation of an ICD
- 22.4.2. Indications for ICD Implantation

22.5. ICD II
- 22.5.1. ICD Implantation Technique Peculiarities with Respect to Pacemakers
- 22.5.2. Post-Implant Discharge Programming
- 22.5.3. Follow-Up Consultation Protocol

22.6. Resynchronization Therapy
- 22.6.1. Theoretical Basis
- 22.6.2. Indications for Cardiac Resynchronization Device Implantation

22.7. Resynchronization Therapy II
- 22.7.1. CSR Implant Technique. Peculiarities with Respect to Other Devices
- 22.7.2. Post-Implant Discharge Programming
- 22.7.3. Follow-Up Consultation Protocol

22.8. Physiological Stimulation
- 22.8.1. Hisian Stimulation
- 22.8.2. Left Bundle Branch Stimulation

22.9. Other Implantable Devices
- 22.9.1. Pacemaker without Wires
- 22.9.2. Subcutaneous ICD

22.10. Electrode Removal
- 22.10.1. Electrode Removal Indications
- 22.10.2. Extraction Procedures

Module 23. Atrial Fibrillation

23.1. Importance of Atrial Fibrillation
- 23.1.1. Epidemiology of Atrial Fibrillation
- 23.1.2. Socioeconomic Impact of Atrial Fibrillation

23.2. Atrial Fibrillation in the Clinic
- 23.2.1. Clinical Presentation and Symptomatology
- 23.2.2. Initial Diagnostic Study

23.3. Thromboembolic and Hemorrhagic Risk Assessment
- 23.3.1. Anticoagulant Treatment. Clinical Evidence
- 23.3.2. Direct Acting Anticoagulants
- 23.3.3. Vitamin K Antagonists
- 23.3.4. Earlobe Closure

23.4. Clinical Management of Atrial Fibrillation
- 23.4.1. Frequency Control Strategy
- 23.4.2. Rhythm Control Strategy

23.5. Atrial Fibrillation Ablation I
  23.5.1. Indications
  23.5.2. Evidence of Efficacy
23.6. Atrial Fibrillation Ablation II
  23.6.1. AF Ablation Techniques
  23.6.2. AF Ablation Results
  23.6.3. Possible Complications of AF Ablation
23.7. Follow-Up after Atrial Fibrillation Ablation
23.8. Future Prospects in Atrial Fibrillation Ablation
23.9. AF in Specific Contexts: Postoperative, Intracranial Hemorrhage, Pregnancy, Athletes, etc.
23.10. Anticoagulant Therapy in Patients with Ischemic Heart Disease
23.11. Implications and Management of AHREfs and Subclinical AF

Module 24. Arrhythmias and Heart Failure

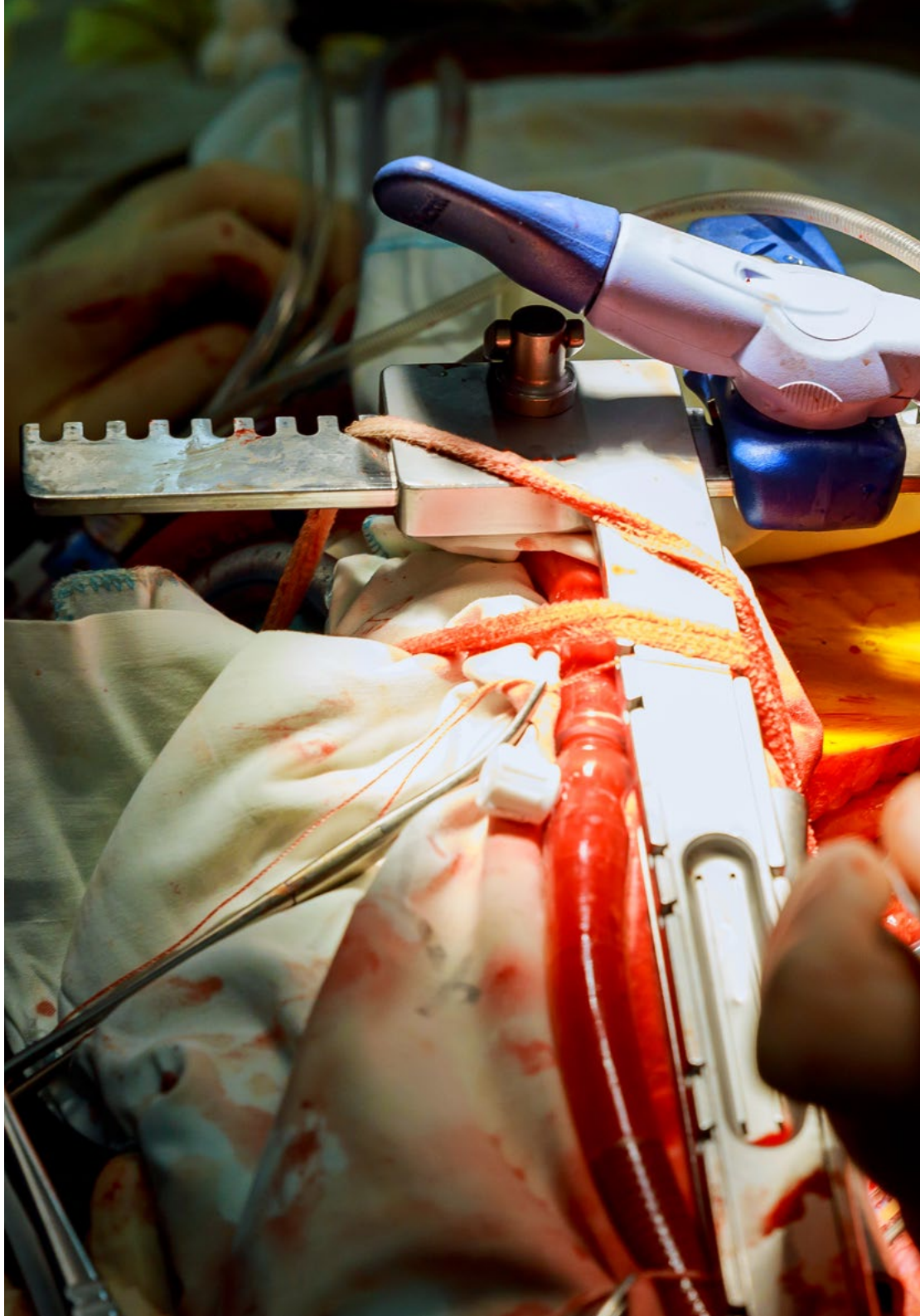
24.1. Importance of Rhythm Disturbances in Heart Failure
24.2. AF and Heart Failure
  24.2.1. Epidemiology of AF in HF in Heart Failure
  24.2.2. Prognostic Implication of the Presence of AF in Patients with Heart Failure
24.3. AF and Heart Failure Role of Ablation and Antiarrhythmic Drugs
24.4. Risk Assessment of Ventricular Arrhythmias in HF
  24.4.1. The Role of Stereotactic Body Radiotherapy RMN
  24.4.2. Role of Genetics
24.5. Management of Ventricular Arrhythmias in Heart Failure
24.6. Indications for CRS Therapy and Other Devices in the Context of Heart Failure
  24.6.1. Conventional Resynchronizer
  24.6.2. Physiological Stimulation (Hisian and Left Bundle Branch)
24.7. Tachycardiomyopathy
  24.7.1. Concept and Epidemiology
  24.7.2. Diagnostic Study
24.8. Management of a Patient with Tachycardiomyopathy
  24.8.1. Medical Treatment
  24.8.2. Indications and Ablation Approach
24.9. PM-Mediated Ventricular Dysfunction Prevalence and Management
24.10. LBBB and Ventricular Dysfunction Does Dyssynchronopathy Exist?

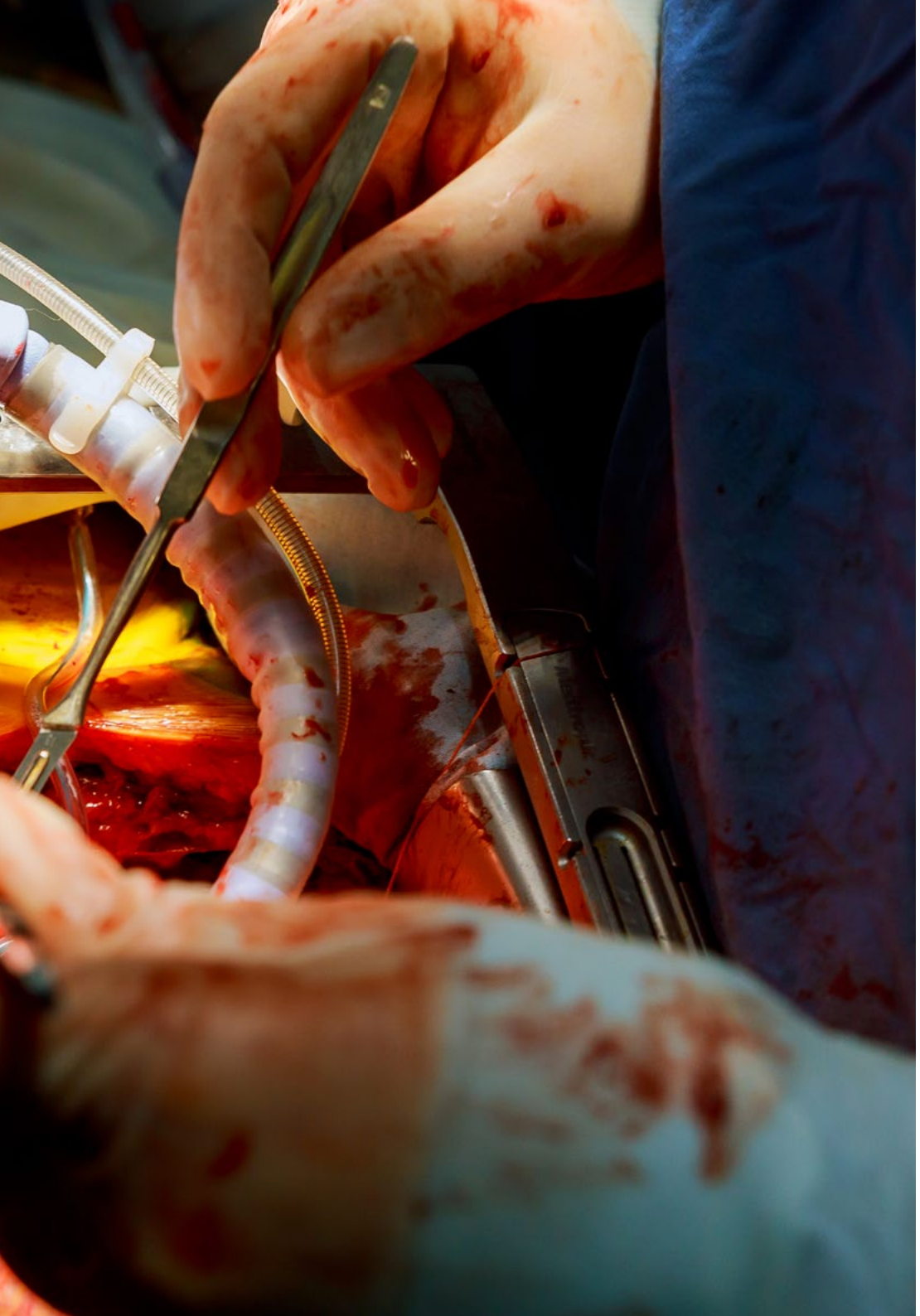
Module 25. Arrhythmic Syndromes, Sudden Cardiac Death and Channelopathies

25.1. Sudden Cardiac Death
  25.1.1. Concept and Epidemiology of Sudden Cardiac Death
  25.1.2. Causes of Sudden Cardiac Death
25.2. Sudden Cardiac Death II
  25.2.1. Diagnostic Study after Recovered Cardiac Arrest
  25.2.2. Clinical Management. Prevention
25.3. Concept of Canalopathy Epidemiology
25.4. Brugada Syndrome
  25.4.1. Indications for Electrophysiological Study
  25.4.2. Indications of ICD
  25.4.3. Medical Treatment
25.5. Long QT Syndrome.
  25.5.1. Indications of AID
  25.5.2. Medical Treatment
25.6. Short QT Syndrome
  25.6.1. Indications of ICD
  25.6.2. Medical Treatment
25.7. Early Repolarization and CVPT
  25.7.1. Indications of AID
  25.7.2. Medical Treatment
25.8. The Importance of Genetics
  25.8.1. Family Studies

Module 26. Myocardiopathies and Arrhythmias

26.1. Association of Cardiomyopathies and Arrhythmias
26.2. Dilated Cardiomyopathy
  26.2.1. Atrial Arrhythmias
  26.2.2. Ventricular Arrhythmias
26.3. Prevention of Arrhythmias and Sudden Cardiac Death in Dilated Cardiomyopathy
  26.3.1. Indications of AID
  26.3.2. Role of Genetics
26.4. Hypertrophic Cardiomyopathy Indications of ICD
  26.4.1. Atrial Arrhythmias
  26.4.2. Ventricular Arrhythmias
26.5. Prevention of Arrhythmias and Sudden Cardiac Death in Hypertrophic Cardiomyopathy
  26.5.1. Indications of ICD
26.6. Arrhythmogenic Cardiomyopathy
  26.6.1. Description
  26.6.2. Most Frequent Arrhythmias and Peculiarities in their Management
  26.6.3. Prevention of Sudden Death Indications of AID
26.7. Amyloidosis
  26.7.1. Description
  26.7.2. Most Frequent Arrhythmic Disorders and Peculiarities in their Management
  26.7.3. PM Indications
26.8. Other Cardiomyopathies and their Association with Cardiac Rhythm Disorders
  26.8.1. Dystrophies and Neuromuscular Diseases Indications for ICD and MP
26.9. Study of AVB in Young Patients
  26.9.1. Diagnostic and Therapeutic Algorithm





Module 27. Arrhythmias in Other Clinical Contexts

27.1. Arrhythmias in the Population without Heart Disease
27.2. Arrhythmias in Athletes
27.3. Arrhythmias in the Critically Ill Cardiac Patient
  27.3.1. Epidemiology
  27.3.2. Study and Clinical Management
  27.3.3. Management of Arrhythmic Storm
  27.3.4. Transient Pacemaker Indications and Implantation Technique
27.4. Out-of-Hospital Cardiac Arrest Care
27.5. Arrhythmias in the Non-Cardiologic Critically Ill Patient
27.6. Arrhythmias in Patients Undergoing Cardiac Surgery and after TAVI
27.7. Arrhythmias in Congenital Heart Disease in Children
27.8. Arrhythmias in Congenital Heart Disease in In Adults

By enrolling in this Advanced Master's Degree you will not only be accessing the most comprehensive and up-to-date cardiac syllabus, but also the largest medical school in the world. Would you like to be part of it?"

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

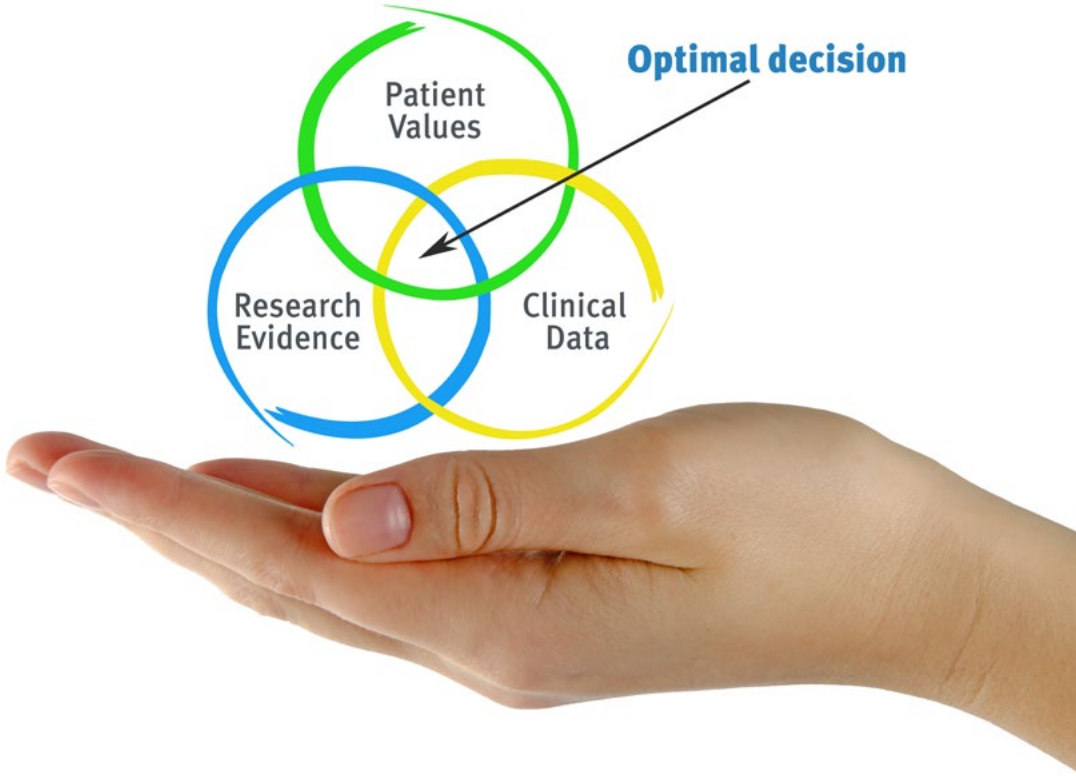
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

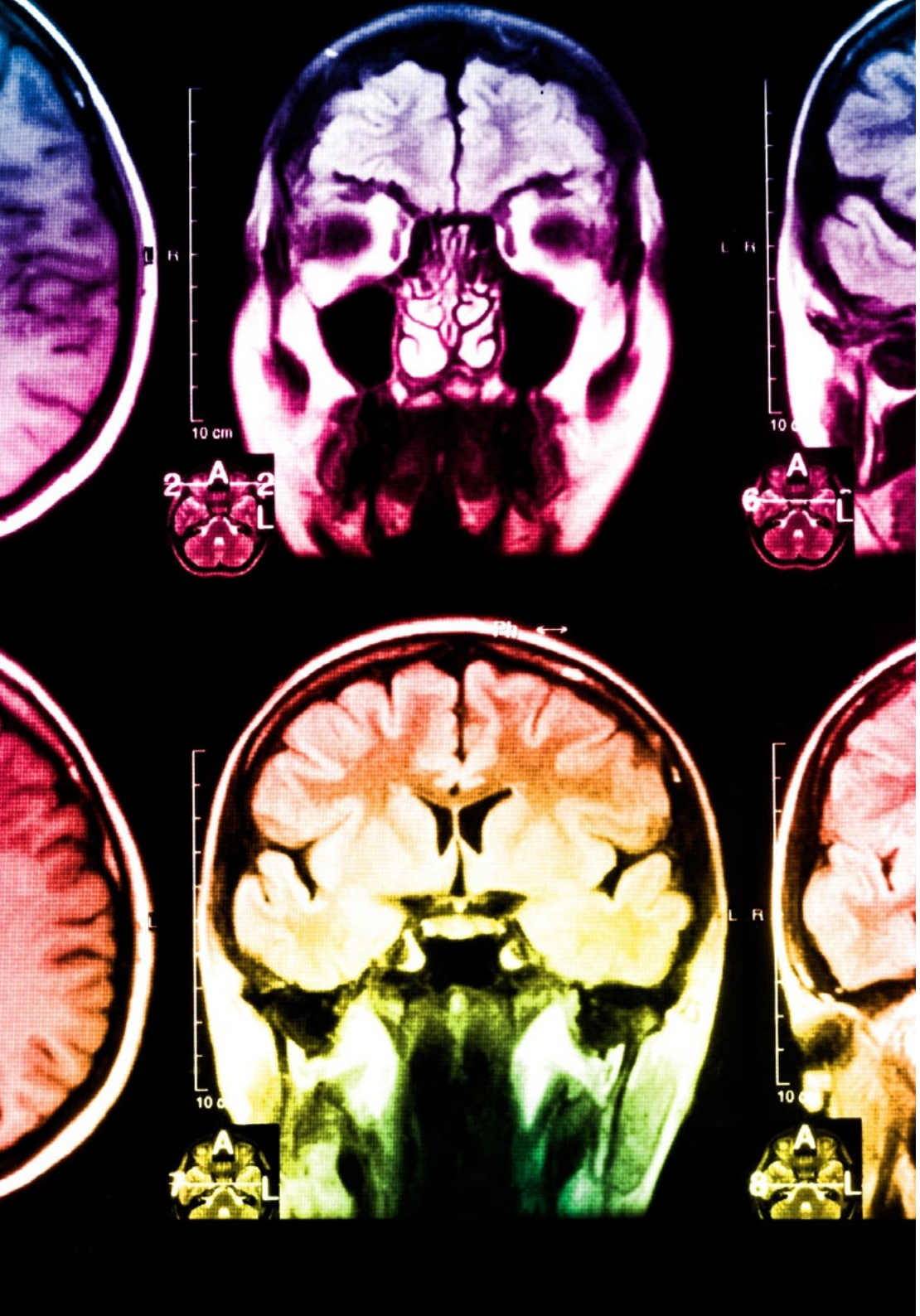
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Surgical Techniques and Procedures on Video

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

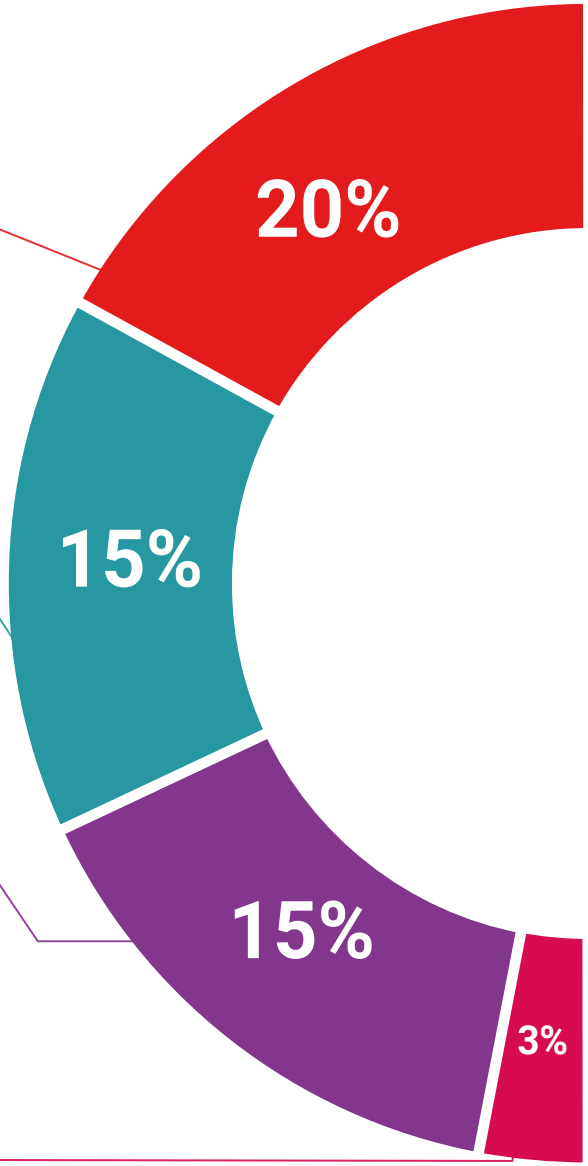
Interactive Summaries

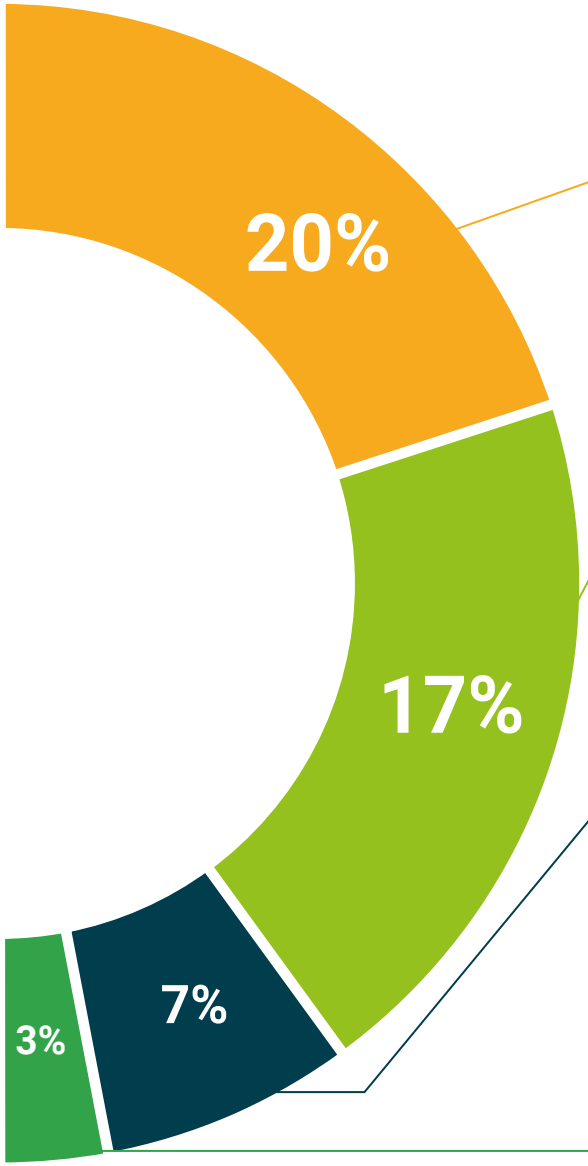
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

07

Certificate

The Advanced Master's Degree in Cardiac Medicine and Surgery guarantees you, in addition to the most rigorous and up-to-date training, access to a Advanced Master's Degree issued by TECH Technological University.

Successfully complete this program and receive your university degree without travel or laborious paperwork"

This **Advanced Master's Degree in Clinical Ultrasound for Nursing** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** issued by **TECH Technological University** via tracked delivery.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Advanced Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Advanced Master's Degree in Cardiac Medicine and Surgery**

Official Nº of hours: **3,000 h.**

tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

ADVANCED MASTER'S DEGREE

in

Cardiac Medicine and Surgery

This is a qualification awarded by this University, equivalent to 3,000 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

Advanced Master's Degree in Cardiac Medicine and Surgery

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Anatomy and Pathophysiology of the Cardiovascular System	150	CO
1º	Extracorporeal Circulation ECC	150	CO
1º	Perioperative Care	150	CO
1º	Ischemic Heart Disease	150	CO
1º	Valvular Pathology	150	CO
1º	Pathology of the Aorta	150	CO
1º	Congenital Heart Disease	150	CO
1º	Treatment of Other Cardiac Pathologies, Transcatheter Valve Implantation and Concomitant Conditions	150	CO
1º	New Technologies and Imaging Techniques Statistics	150	CO
2º	Clinical Presentation of Coronary Syndromes (SCA) and Classification NSTE-ACS 1: Epidemiology. Pathophysiology and Classification	150	CO
2º	NSTE-ACS 2: Imaging and Ischemia Detection Tests	150	CO
2º	NSTE-ACS 3: Medical and Revascularization Treatment	150	CO
2º	NSTE-ACS 13: Clinical Picture, Presentation and Pre-Hospital and Emergency Assessment	150	CO
2º	NSTE-ACS 14. Patient Management in the Hospital. Coronary Unit	75	CO
2º	NSTE-ACS 3: TTE and Other Imaging Tests in Acute Patient Assessment and in the Hospital Phase	75	CO
2º	NSTE-ACS 4: Limitation of Infarct Size. Reperfusion Therapies	75	CO
2º	ACS Secondary Prevention. Cardiac Rehabilitation Programs	75	CO
3º	Arrhythmias. Fundamental Concepts	75	CO
3º	Bradyarrhythmias	75	CO
3º	Supraventricular Tachyarrhythmias	75	CO
3º	Ventricular Tachyarrhythmias	75	CO
3º	Devices (Pacemaker, ICD and Resynchronizer)	75	CO
3º	Atrial Fibrillation	75	CO
3º	Arrhythmias and Heart Failure	75	CO
3º	Arrhythmic Syndromes, Sudden Cardiac Death and Channelopathies	75	CO
3º	Myocardiopathies and Arrhythmias	75	CO
3º	Arrhythmias in Other Clinical Contexts	75	CO

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Dean

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*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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Advanced Master's Degree
Cardiac Medicine and Surgery

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree
Cardiac Medicine and Surgery

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