

Professional Master's Degree

Fetal Medicine and Prenatal Diagnosis



Professional Master's Degree Fetal Medicine and Prenatal Diagnosis

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/professional-master-degree/master-fetal-medicine-prenatal-diagnosis

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01

Introduction

The recent sociodemographic change in the obstetric population has been characterized by situations such as a decrease in the birth rate, older pregnant women, increase in assisted reproduction techniques, pregnancies with a higher number of complications, etc. This has given great importance to the role of Maternal-Fetal Medicine. Continuous advances in the area of Gynecology and Obstetrics have allowed the development of specific techniques and protocols that allow the detection and treatment of both fetal anomalies and complications in very early stages of gestation, even before they develop. In order to provide specialists in this field with the latest information on the subject, TECH has developed a 100% online program as a guide to update their concepts in relation to Fetal Medicine and Prenatal Diagnosis.



“

Would you like to get up to date on the latest diagnostic developments related to the screening of chromosomal abnormalities through a degree of the highest level? Then, choose this Professional Master's Degree”

There are both maternal and gestational conditions that increase the risk of developing complications during pregnancy. These may include advanced maternal age, obesity, diabetes, hypertension, hereditary diseases, multiple gestations, preeclampsia, etc. The presence of certain risk factors will oblige the pregnant woman to closely monitor her pregnancy, since they can not only affect her health, but also increase the chances of developing anomalies and complications that have a direct impact on the fetus. For this reason, it is necessary to recognize the important role of the different screening techniques, as well as the progress in fetal therapies and intrauterine treatments to increase the chances of achieving a healthy and safe pregnancy.

Given all the information that exists in this regard, and taking into account the developments that have recently emerged in this sector, TECH has developed this program in Fetal Medicine and Prenatal Diagnosis. It is a complete, dynamic and rigorous educational experience through which the specialists will be able to get up to date with the most innovative techniques and therapies for the early detection and effective management of cases related to severe placental pathologies, complications, multiple pregnancies, etc. In addition, it focuses on the most innovative tests, such as echocardiography and neurosonography, among others, in the improvement of their management and in the updating of the recommended clinical guidelines for their use.

All this throughout 1,500 hours of diverse content (theoretical, practical and additional), which has been designed by a teaching team versed in various areas of Gynecology and Obstetrics, but with emphasis on the Prenatal field. In addition, the most relevant feature of this Professional Master's Degree is its convenient 100% online format, which will allow the graduates to connect to the program from wherever and whenever they want, using any electronic device with internet connection. Therefore, It is, a unique opportunity for the professionals to get their clinical practice up to date in just 12 months and with the endorsement of a great university like TECH.

This **Professional Master's Degree in Fetal Medicine and Prenatal Diagnosis** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Gynecology and Obstetrics
- ◆ 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
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable electronic device with an Internet connection



A unique opportunity to get up to date in the use of fetal neurosonography through a 100% online program at the forefront of Prenatal Medicine and Diagnosis"

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Would you like to be able to address cases of multiple gestation through clinical strategies specialized in it and based on the latest medical developments? Enroll in this program and stay informed"

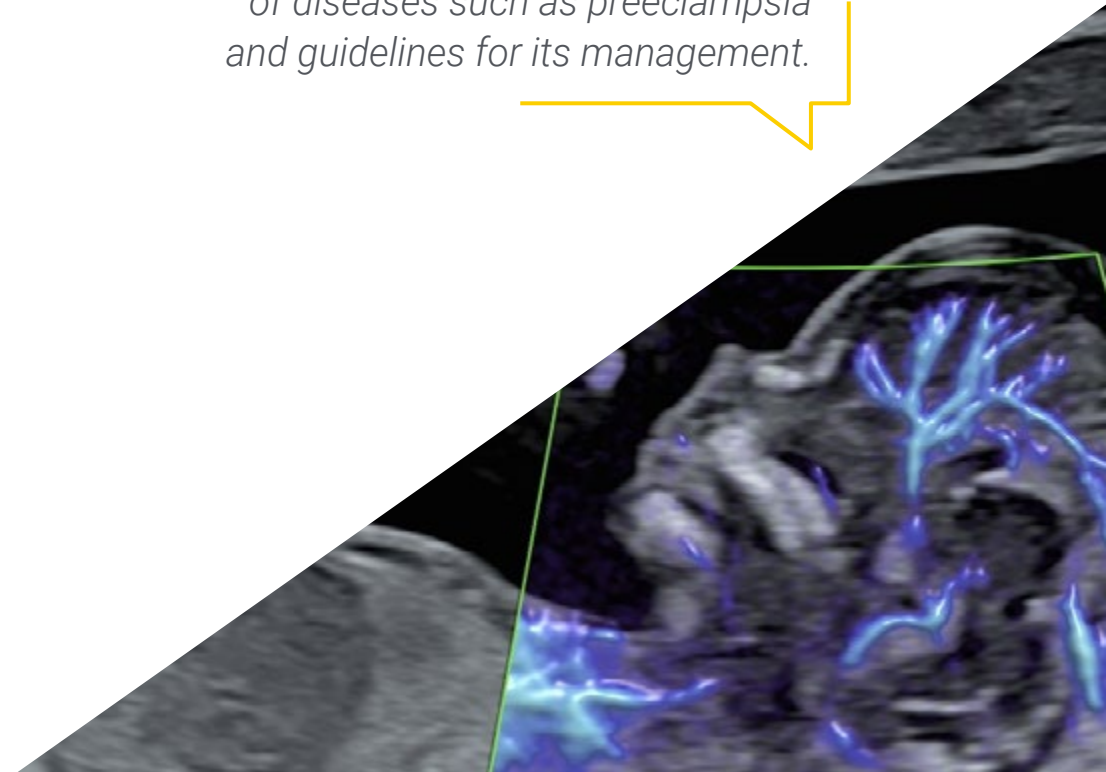
The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professionals must try to solve the different professional practice situations that are presented throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

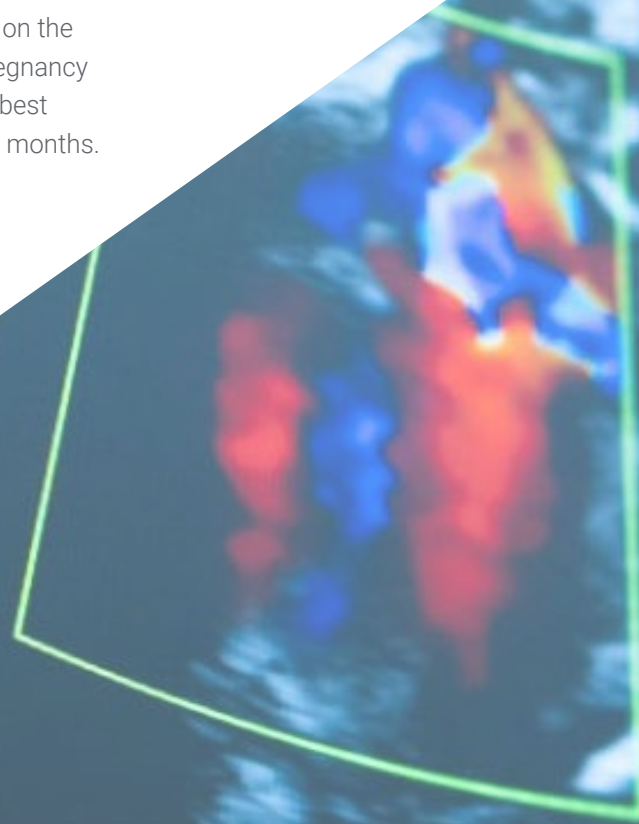
Preterm birth prevention is one of the most important practices in high-risk pregnancies. For that reason, TECH has included an updated module in this program.

In this program, you will find the most advanced diagnostic tests for the comprehensive pathological analysis of diseases such as preeclampsia and guidelines for its management.



02 Objectives

The growing knowledge in the field of Maternal-Fetal Medicine, as well as the need to try to prevent and treat complications at increasingly earlier stages of gestation, is what has motivated TECH to design this Professional Master's Degree. It considers that professionals in the field of Gynecology and Obstetrics need to have a tool that allows them to update their knowledge on Fetal Medicine and Prenatal Diagnosis based on the advances that have occurred in this field in recent years, and in favor of a safe pregnancy for the mother and fetus. Therefore TECH, will provide the professionals with the best resources, in order to achieve a complete, dynamic and assured update in just 12 months.



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If one of your objectives is to get up to date in the treatment of fetuses in different stages, you have the perfect option to achieve it from wherever you wish and without fixed schedules”



General Objectives

- ◆ Provide a specific update that allows graduates to get their skills up to date to exercise and lead the functions as specialists in the field of Fetal Medicine and Prenatal Diagnosis
- ◆ Update theoretical knowledge in the different fields of Fetal Medicine: basic and advanced obstetric ultrasound, prenatal diagnosis, maternal-fetal pathologies and placental pathologies
- ◆ Link the improvement of medical practice with scientific research, so that the professionals can contribute to change and progress in their clinical environment through the application of the most innovative and effective guidelines and strategies in the field



Ultrasound, doppler ultrasound, MRI, preimplantation techniques, etc. In this Professional Master's Degree you will find the most innovative guidelines for its management and recommendations based on the characteristics of each patient"*



Specific Objectives

Module 1. Fetal Medicine

- ◆ Delve into the latest developments in Fetal Medicine
- ◆ Review the fundamental characteristics of bioethics, biostatistics, epidemiology and genetics applied to this field
- ◆ Understand the most innovative principles of ultrasound and other imaging techniques as tools for Prenatal Diagnosis
- ◆ Update graduates on the necessary requirements for the operation of a Fetal Medicine service

Module 2. Screening of Chromosome Abnormalities

- ◆ Delve into the latest developments of the screening test
- ◆ Have a comprehensive understanding of the latest advances related to the application of combined screening for chromosomal abnormalities in the first trimester of gestation, both in single and multiple gestations.
- ◆ Discern among the types of genetic diagnostic tests available and their indications
- ◆ Master the skills of interpretation of results and the genetic counseling

Module 3. Morphological Ultrasound

- ◆ Get up to date on the systematics for fetal anatomical study in the three trimesters of gestation
- ◆ Distinguish which malformative anomalies are detectable prenatally
- ◆ Review the fetal pathology by organs and systems, delving into their clinical novelties

Module 4. Fetal Neurosonography

- ◆ Get up to date on the systematic study of the fetal central nervous system
- ◆ Identify the main anomalies based on the latest scientific advances

Module 5. Fetal Echocardiography

- ◆ Delve into the early study and screening of congenital cardiopathies
- ◆ Get up to date on the systematics of fetal cardiac screening
- ◆ Identify the main congenital heart diseases that can be diagnosed prenatally

Module 6. Placental pathology and fetal growth restriction

- ◆ Obtain up-to-date knowledge on the mechanism of placentation and how it influences the development of pathologies such as preeclampsia and fetal growth restriction
- ◆ Get up to date on the rules to perform a proper doppler study in order to be able to make a correct maternal and fetal hemodynamic evaluation
- ◆ Know what early screening for preeclampsia and its prophylactic treatment
- ◆ Know in an exhaustive and updated way the definition of preeclampsia, its severity criteria and the treatment
- ◆ Identify fetal growth restriction, stages and management

Module 7. Multiple Gestation

- ◆ Delve into new developments in embryology and the origin of multiple gestations
- ◆ Get up to date on the types of twin gestations and their clinical management
- ◆ Update the protocol for dealing with discordant anomalies
- ◆ Delve into the latest development related to the specific complications of monochorionic gestations

Module 8. Diagnosis and Prevention of the Premature Birth

- ◆ Have a thorough and up-to-date understanding of the epidemiological impact and incidence of preterm birth today
- ◆ Understand the new scientific developments related to the triggers of preterm labor
- ◆ Know how to identify and treat the threat of preterm labor based on the latest clinical innovations
- ◆ Update the keys to the correct ultrasound evaluation of cervical length
- ◆ Gain up-to-date knowledge on the various preventive measures for preterm labor

Module 9. Maternal-Fetal Pathology

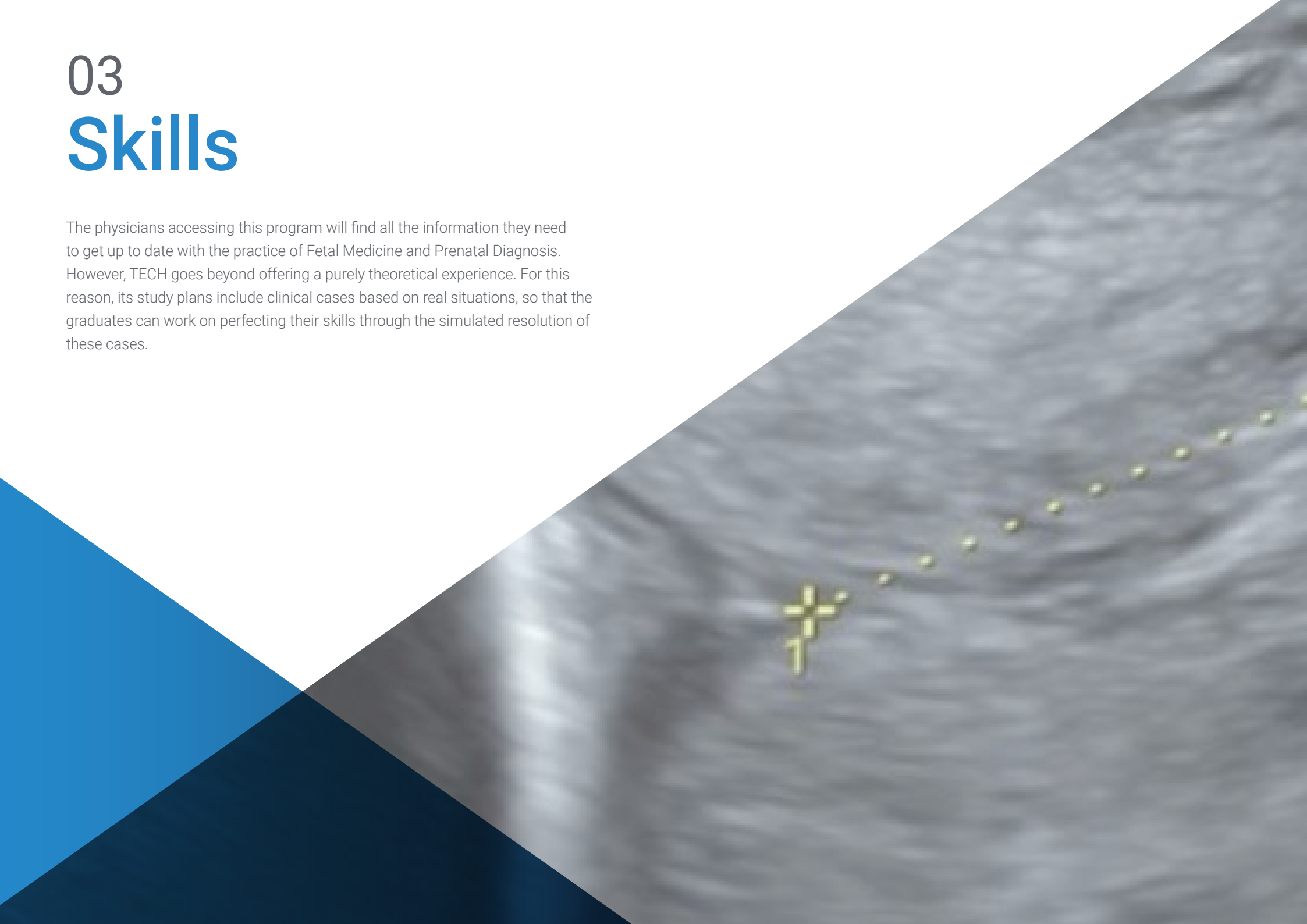
- ◆ Delve into the scientific novelties related to the different types of maternal pathology with fetal repercussions that can be prevented, diagnosed and/or treated prenatally
- ◆ Delve into the latest development related to the treatments applicable to fetuses of different ages

Module 10. Intrauterine Fetal Therapy and Invasive Procedures

- ◆ Delve into the current state of fetal surgery and its future projection
- ◆ Know how to identify, based on the most up-to-date medical standards, the pathologies requiring fetal surgery
- ◆ Update the techniques and approach routes of the different invasive procedures
- ◆ Acquire a set of up-to-date theoretical knowledge necessary to implement the main invasive procedures in fetal medicine and therapy

03 Skills

The physicians accessing this program will find all the information they need to get up to date with the practice of Fetal Medicine and Prenatal Diagnosis. However, TECH goes beyond offering a purely theoretical experience. For this reason, its study plans include clinical cases based on real situations, so that the graduates can work on perfecting their skills through the simulated resolution of these cases.



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You will be able to put yourself in a situation with more than 10 clinical cases that TECH will make available to you to perfect your medical skills in combined screening and in the management of complex situations in pregnancy”

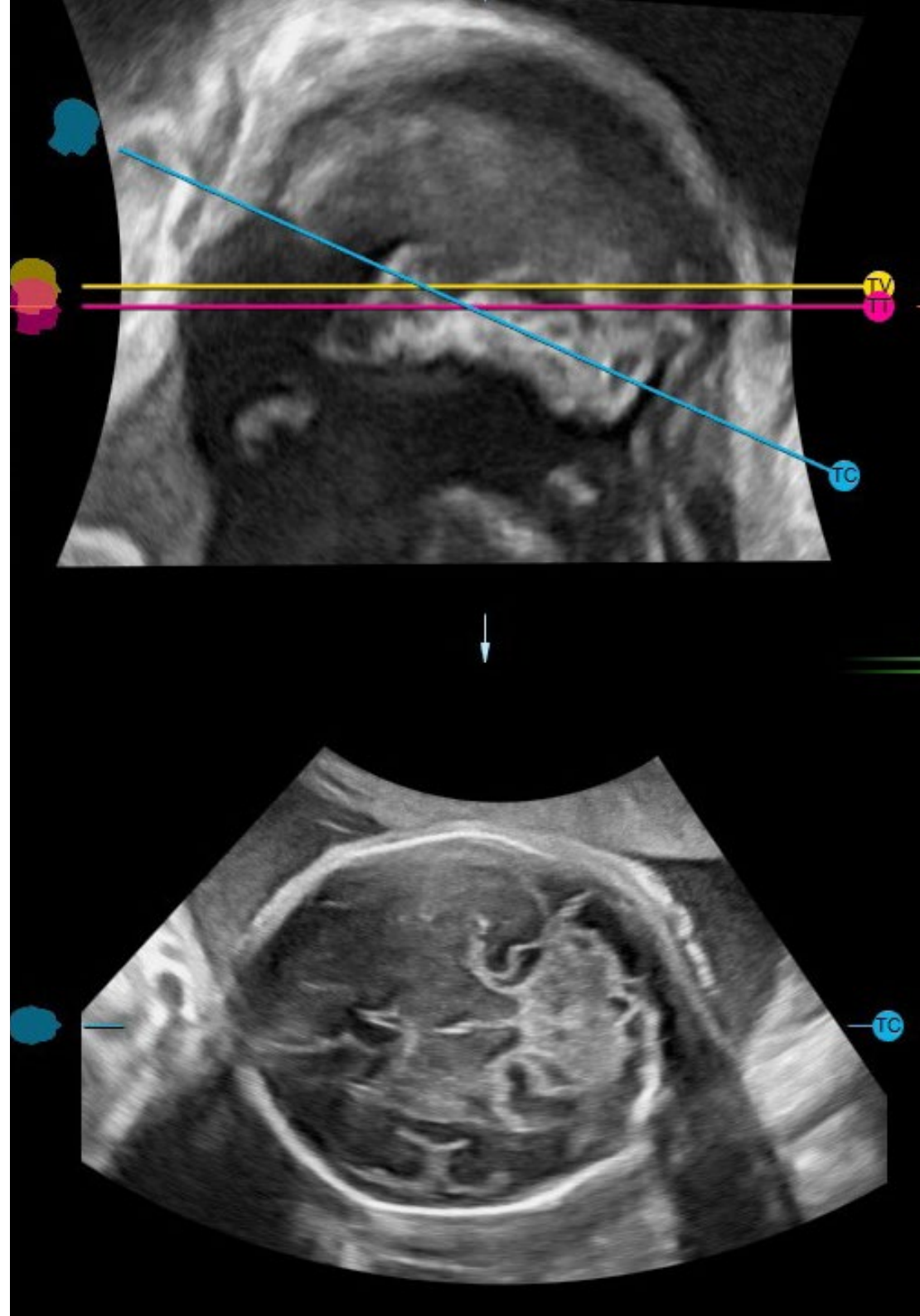


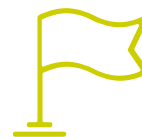
General Skills

- ◆ Manage the global concepts related to Fetal Medicine based on the most innovative clinical developments
- ◆ Obtain a practical and up-to-date approach based on the guidelines, protocols and specific guidelines related to the latest advances in Prenatal Diagnosis
- ◆ Master the clinical management of the different fetal pathologies based on the most advanced clinical criteria and through the use of the most sophisticated and advanced clinical equipment

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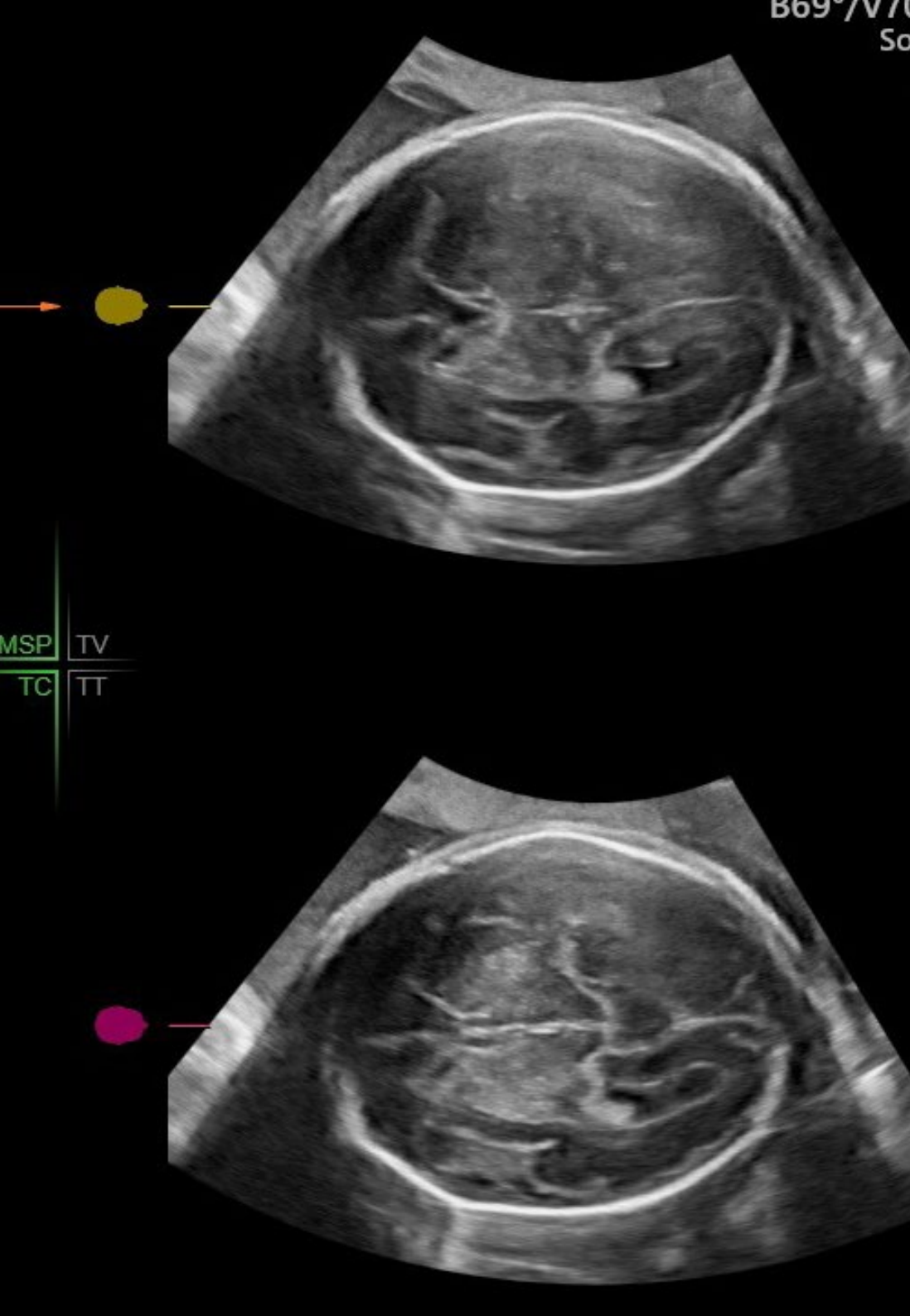
The simulated resolution of situations related to the different prenatal anomalies will help you develop new skills in the approach to conception and pregnancy”





Specific Skills

- ◆ Master perfectly the diagnostic, preventive and/or therapeutic actions performed on the fetus during gestation on the basis of current scientific evidence
- ◆ Detect, following the most innovative guidelines of gynecology and obstetrics, congenital defects, anomalies in the morphological, structural, functional or molecular development present at the time of birth
- ◆ To perfectly handle ultrasound as the prenatal screening method available par excellence
- ◆ Delve into the clinical novelties related to the ultrasound examination of the fetal CNS and apply clinical strategies adapted to each case
- ◆ Diagnose, based on the latest scientific evidence, congenital heart disease early in the fetus
- ◆ Gain the necessary knowledge to deal with cases of multiple gestation following the most innovative guidelines of Fetal Medicine and Prenatal Diagnosis



04

Course Management

TECH has selected for this Professional Master's Degree a group of professionals of the highest level in the field of Gynecology and Prenatal Obstetrics. This is a teaching team versed in clinical practice in hospitals of national and international renown, which, in addition, have combined continuous educational activity with the activity in their medical offices and teaching in various programs related to women's health. As a result, the graduates will obtain different views on Fetal Medicine in the current context, but all of them based on international standards of clinical care.



“

You will have the support of a large teaching team of the highest professional level, which will motivate you to get the most out of this program with educational material designed exclusively for you”

Management



Dr. Gallardo Arozena, Margarita

- ◆ Founder and Medical Director of Natum Center - Ultrasound and Fetal Medicine
- ◆ Doctor in Health Sciences, University of La Laguna
- ◆ Master's Degree in Refresher for Gynecologists and Obstetricians from the University of Barcelona
- ◆ Master's Degree in Healthcare Management in Gynecology and Obstetrics from the Francisco de Vitoria University.
- ◆ Diploma in Fetal Medicine and Surgery from the Fetal Medicine Foundation (King's College Hospital in London). Invasive Techniques and Intrauterine Fetal Therapy at San Cecilio Granada University Hospital
- ◆ Certificate of qualification in obstetric-gynecological ultrasound by the Spanish Society of Gynecology and Obstetrics (SEGO)
- ◆ Researcher and author of scientific articles published in high-impact journals
- ◆ Member of the Prenatal Diagnosis Unit at the Human Reproduction Assistance Center of Canary (FIVAP)

Professors

Dr. Cuenca Gómez, Diana

- ◆ Specialist in Obstetrics and Gynecology at Ginemad Salazar
- ◆ Professor of clinical practice of the Medicine Degree at the Complutense University of Madrid and at the Francisco de Vitoria University
- ◆ Director of the Prenatal Genetics course at the iMaterna Foundation
- ◆ Master's Degree in Clinical Genetics from San Pablo University CEU
- ◆ Expert in Gynecological and Obstetric Ultrasound by the Complutense University of Madrid and Expert in Clinical Genetics by the University of Alcalá de Henares

Dr. Company Calabuig, Ana María

- ◆ Diploma in Fetal Medicine and Surgery from the Fetal Medicine Foundation (King's College Hospital, London)
- ◆ Master's Degree in Refresher Communication Management for Gynecologists and Obstetricians from the University of Barcelona
- ◆ Master's Degree in Nutrition and Health from the International University of Valencia
- ◆ Author of scientific publications in high impact journals and participation in book chapters

Dr. Pérez Gómez, Adela Marina

- ◆ Degree in Medicine and Surgery, La Laguna University
- ◆ Qualification in Gynecological and Obstetric Ultrasound by the University Hospital of the Canary Islands
- ◆ Participation as author in papers presented at congresses and courses related to the specialty

Dr. De Paco Matallana, Catalina

- ◆ Regular reviewer of articles in international and national journals on Gynecology and Obstetrics
- ◆ Associate Professor of Obstetrics and Gynaecology at Murcia University
- ◆ PhD in Medicine and Surgery
- ◆ Degree in Medicine and Surgery from the University of Murcia
- ◆ Specialist MIR in Gynecology and Obstetrics
- ◆ Sub-specialization in Fetal Medicine and Surgery at King's College University Hospital in London

Dr. Hernández Suárez, Mercedes

- ◆ Ph.D in Health Sciences (Maternal and Child and Adolescent Health), University of La Laguna
- ◆ Master's Degree in Refresher for Gynecologists and Obstetricians from the University of Barcelona
- ◆ Postgraduate Diplomas in Obstetrical Diagnosis and Pathology, Uterine Pathology
- ◆ Participation as author in papers presented at congresses and courses related to the specialty

Dr. Molina García, Francisca Sonia

- ◆ Head of the Ultrasound Unit of the Gutenberg Center in Granada.
- ◆ Director of several lines of research projects funded on preeclampsia, preterm delivery, fetal and maternal complications during pregnancy and fetal surgery
- ◆ Regular reviewer of articles in five international and national journals on Gynecology and Obstetrics
- ◆ Contributing Editor in Fetal Diagnosis and Therapy
- ◆ European PhD in Medicine and Surgery from the University of Granada
- ◆ Sub-specialization in Fetal Medicine and Surgery at King's College University Hospital in London

Dr. Pérez de la Rosa, Beatriz

- ◆ Doctor Specialist in Obstetrics and Gynecology at the Martinez Wallin Clinic, at the Taco Medical Center and at the Dermamedicin Clinic
- ◆ Collaborator in various courses and workshops as well as speaker at conferences and author of book chapters related to the specialty
- ◆ Master's Degree in Gynecologic Oncology by CEU Cardenal Herrera University
- ◆ Postgraduate Diploma in: Vulvar Cancer, Cervical Cancer, Endometrial Cancer, Uterine Sarcoma, Ovarian Cancer and Rare Gynecological Tumors

Dr. Azumendi Gómez, Pedro

- ◆ Doctor specialist in Obstetrics and Gynecology at Gutenberg Center of Malaga
- ◆ Postgraduate Diplomas in Professional Refresher for Gynecologists: Uterine Pathology in Menopause and Reproduction, Ultrasound Diagnosis of Endometrial and Uterine Pathology, Gynecological Exploration and Breast and Vulvar Pathology, Medical Genetics
- ◆ Author of scientific publications in high impact journals and participation in book chapters

Dr. García Delgado, Raquel

- ◆ Expert level in Obstetric-Gynecologic Ultrasound by SESEGO.
- ◆ Author of scientific publications in high impact journals and participation in several book chapters
- ◆ Reviewer of articles in international journals on Gynecology and Obstetrics
- ◆ Speaker at national and international congresses and courses related to Prenatal Diagnosis
- ◆ Accredited by the Fetal Medicine Foundation to perform first trimester screening, second trimester screening, echocardiography and fetal Doppler

Dr. Caamiña Álvarez, Sara

- ◆ Author of several scientific articles related to Obstetrics and Gynecology Speaker at national and international medical congresses
- ◆ Researcher in different projects related to the maternal-fetal area, pregnancy and childbirth
- ◆ Master's Degree Refresher for Gynecologists and Obstetricians from the Universitat of Barcelona

Dr. García Rodríguez, Raquel

- ◆ Expert level in Obstetric-Gynecologic Ultrasound by SESEGO
- ◆ Author of scientific publications in high impact journals and participation in several book chapters
- ◆ Reviewer of articles in international journals on Gynecology and Obstetrics
- ◆ Speaker at national and international congresses and courses related to Prenatal Diagnosis
- ◆ Accredited by the Fetal Medicine Foundation to perform first trimester screening, second trimester screening, echocardiography and fetal Doppler

Dr. De Ganzo Suárez, Tania del Carmen

- ◆ Specialised doctor of the Fetal Medicine Unit, Tenerife Hospiten Group
- ◆ Diploma in Fetal Medicine and Surgery from the Fetal Medicine Foundation (King's College Hospital in London). Invasive Techniques and Intrauterine Fetal Therapy at San Cecilio Granada University Hospital
- ◆ Training diploma in obstetric-gynecological ultrasound by the Spanish Society of Gynecology and Obstetrics (SEGO)
- ◆ Researcher Author of scientific articles published in high-impact journals

Dr. Plasencia Acevedo, Walter

- ◆ Specialised doctor of the Fetal Medicine Unit of Canary Hospiten Group
- ◆ Doctor in Medicine and Surgery from the University of La LagunaSub-specialization in Fetal Medicine and Surgery at King's College University Hospital, London
- ◆ Supervisor of more than 3,000 ultrasound studies annually
- ◆ Author of over 50 scientific publications in international high-impact journals
- ◆ Director of several national and international research projects on fetal anomalies, placental abnormalities, preeclampsia, preterm delivery and fetal and maternal complications during gestation
- ◆ Regular reviewer of articles in multiple international and national journals on his specialty

Dr. Corrales Sánchez, Carlos

- ◆ Doctor Specialist in Obstetrics and Gynecology at Gutenberg Center of Malaga
- ◆ Master's Degree in Gynecologic Oncology by CEU Cardenal Herrera University
- ◆ Postgraduate Diplomas in rare gynecological tumors, uterine sarcoma, ovarian cancer, endometrial cancer, cervical cancer, vulvar cancer, as well as obstetric diagnosis and pathology
- ◆ Sub-investigator in multiple Clinical Trials carried out at the Regional University Hospital of Malaga
- ◆ Author and Co-author
- ◆ Doctor Specialist in Obstetrics and Gynecology, Clínica Martínez Wallin

Dr. Chulilla Pérez, Carolina

- ◆ Professor at the Midwifery Teaching Unit of the Nuestra Señora de Candelaria University Hospital
- ◆ Researcher and author of publications related to maternal-fetal medicine
- ◆ Participation as author in papers presented at congresses and courses from the specialty
- ◆ Training in obstetric-gynecological ultrasound by the Spanish Society of Gynecology and Obstetrics (SEGO)

Dr. Dévora Cabrera, María Ylenia

- ◆ Participation in several research projects in the specialty as well as authorship of book chapters
- ◆ Master Degree in Professional Refresher for Gynecologists
- ◆ Author of several scientific articles published in national media

Dr. Gil Mira, María del Mar

- ◆ Main Researcher at the Torrejón University Hospital
- ◆ Director of doctoral theses in the field of Gynecology and Obstetry
- ◆ Author of multiple scientific articles published in high-impact journals
- ◆ Associate Professor in the Department of Gynecology and Obstetry. Faculty of Medicine. Francisco de Vitoria University (UFV), Madrid
- ◆ Co-founder and Vice President of the iMaterna Foundation and leader of the iMaterna research group for the UFV
- ◆ Advisor of the Prenatal Screening Working Group Commissions of Public Health Ministry of Health. Government of Spain
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Board member of World Association in Perinatal Medicine (WAMP)
- ◆ Editor at Perinatal Journal and Editorial board member of Ultrasound in Obstetrics and Gynecology magazine

Dr. Gibbone, Elena

- ◆ Specialist at Ecography and Fetal Medicine Unit of Zuatzu clinic
- ◆ Researcher in several lines related to preeclampsia, twin pregnancy and its complications and maternal pathology in pregnancy
- ◆ International Doctorate in Biomedical Research, University of the Basque Country
- ◆ Degree in Medicine and Surgery
- ◆ Specialist in Gynecology and Obstetrics
- ◆ Sub-specialization in Fetal Medicine and Surgery at King's College University Hospital in London
- ◆ Sub-specialization in Fetal Medicine and Surgery at San Cecilio Clinical Hospital, Granada
- ◆ Author of 10 scientific publications in international high-impact journals

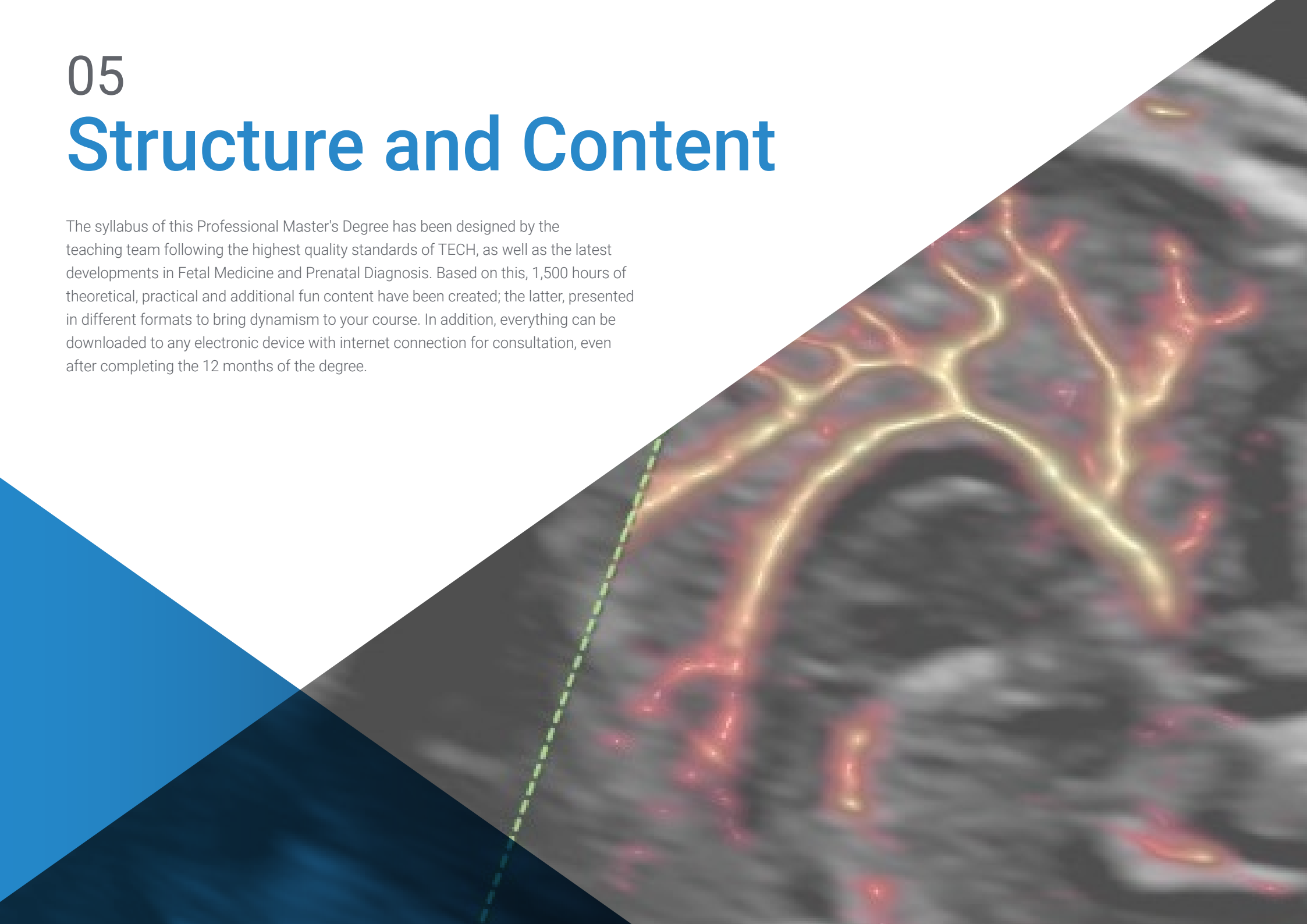
Dr. Rodríguez Zurita, Alicia Otilia

- ◆ Associate Professor in the Department of Obstetrics and Gynecology, Pediatrics, Preventive Medicine and Public Health, Toxicology and Legal and Forensic Medicine of the University of La Laguna
- ◆ Doctor in Medicine and Surgery from the Autonomous University of Las Palmas of Gran Canaria
- ◆ Author of Scientific Articles and Principal Investigator in multiple studies related to maternal-fetal medicine

05

Structure and Content

The syllabus of this Professional Master's Degree has been designed by the teaching team following the highest quality standards of TECH, as well as the latest developments in Fetal Medicine and Prenatal Diagnosis. Based on this, 1,500 hours of theoretical, practical and additional fun content have been created; the latter, presented in different formats to bring dynamism to your course. In addition, everything can be downloaded to any electronic device with internet connection for consultation, even after completing the 12 months of the degree.



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Detailed videos, research articles, complementary readings, news, etc. This Professional Master's Degree offers you hundreds of hours of additional material for you to expand each section in a personalized way”

Module 1. Fetal Medicine

- 1.1. Fetal Medicine
 - 1.1.1. Field of the Fetal Medicine
 - 1.1.2. The Fetus as a Patient
- 1.2. Fundamentals of Bioethics
 - 1.2.1. Bioethics in Fetal Medicine
 - 1.2.2. Main Aspects and Legal Framework
 - 1.2.3. Informed Consent
- 1.3. Legal Gestational Interruption
 - 1.3.1. Current Global Situation
 - 1.3.2. The Specialist as Conscientious Objector
- 1.4. Biostatistics
 - 1.4.1. Biostatistics Principles
 - 1.4.2. Evidence-Based Medicine
 - 1.4.3. Types of Scientific Studies Applied to Fetal Medicine
 - 1.4.4. Publications
- 1.5. Epidemiology
 - 1.5.1. The Importance of Epidemiology in Fetal Medicine
 - 1.5.2. Epidemiological Impact Secondary to Changes in the Obstetric Population
- 1.6. Genetics
 - 1.6.1. Clinical Genetics Applied to Fetal Medicine
 - 1.6.2. Hereditary or Congenital Genetic Diseases
- 1.7. Ultrasound
 - 1.7.1. Ultrasound and Doppler Physics
 - 1.7.2. Equipment
 - 1.7.3. Structure Identification
 - 1.7.4. Artefacts
- 1.8. Other Imaging Techniques: Fetal Magnetic Resonance
 - 1.8.1. Fundamentals
 - 1.8.2. Utility of MRI in Fetal Medicine
 - 1.8.3. Conditions, Indications and Timing of the Scan

- 1.9. The Era of Assisted Reproduction
 - 1.9.1. Current Situation
 - 1.9.2. Impact of Assisted Reproduction Techniques in Fetal Medicine
 - 1.9.3. Preimplantation Genetic Diagnosis
 - 1.9.4. Uses of Hysteroscopy in Early Gestations
- 1.10. Structuring of a Fetal Medicine Service
 - 1.10.1. Basic Conditions Necessary for Structuring a Referral Service in Fetal Medicine
 - 1.10.2. General Aspects of Clinical Management in Pregnancies Complicated by Fetal and Maternal Pathology
 - 1.10.3. The Role of the Specialist in Maternal-Fetal Medicine in Perinatal Care

Module 2. Screening of Chromosome Abnormalities

- 2.1. Combined Screening for Aneuploidies
 - 2.1.1. Basis for Universal Contingent Screening
 - 2.1.2. What does it Consist of?
 - 2.1.3. Performance and Limitations
 - 2.1.4. Current Status and Practical Aspects
- 2.2. Screening in Multiple Gestation
 - 2.2.1. Two-Chorionic Twin Gestation
 - 2.2.2. Monochorionic Twin Gestation
 - 2.2.3. Multiple Gestation of 3 or More Fetuses
 - 2.2.4. Vanishing Twin
- 2.3. Ultrasound Markers of Chromosomopathy
 - 2.3.1. Nuchal Translucency
 - 2.3.2. Nasal Bone
 - 2.3.3. Venous Ductus
 - 2.3.4. Tricuspid Regurgitation
- 2.4. Non-Invasive Prenatal Test (NIPT): Test for Cell-Free Fetal DNA Circulating in Maternal Blood
 - 2.4.1. Indications
 - 2.4.2. Conditions for a Correct Application
 - 2.4.3. Limitations
 - 2.4.4. Future of Non-invasive Prenatal Diagnosis

- 2.5. Invasive Genetic Diagnostic Tests
 - 2.5.1. Chorionic Biopsy
 - 2.5.2. Amniocentesis
- 2.6. Cytogenetics
 - 2.6.1. QF-PCR
 - 2.6.2. FISH
 - 2.6.3. Karyotype
- 2.7. Microarray
- 2.8. Exome
- 2.9. Genetic Counseling in Practicing Fetal Medicine
 - 2.9.1. The Role of the Geneticist
 - 2.9.2. Genetic Counseling
 - 2.9.3. Interpretation of Results of a Genetic Test and Implications in the Course of the Gestation
 - 2.9.4. Pregestational Screening and Counseling
- 2.10. Genomics and Personalized Medicine
 - 2.10.1. Present and Future of Genomic Applications in Fetal Medicine

Module 3. Morphological Ultrasound

- 3.1. Anatomic Evaluation in the First Trimester
 - 3.1.1. Systematics
 - 3.1.2. Detectable Malformation Pathology
- 3.2. Systematic Morphological Ultrasound in the Second Trimester
- 3.3. Head and Neck Anomalies
 - 3.3.1. Acrania
 - 3.3.2. Microcephaly Macrocephaly
 - 3.3.3. Encephalocele
 - 3.3.4. Craniosynostosis
 - 3.3.5. Cervical Teratoma
 - 3.3.6. Cystic Hygroma
 - 3.3.7. Goiter
- 3.4. Face Anomalies
 - 3.4.1. Anophthalmia Microphthalmia
 - 3.4.2. Cataract
 - 3.4.3. Dacryocystocele
 - 3.4.4. Epignatus
 - 3.4.5. Facial fissure
 - 3.4.6. Hypertelorism Hypotelorism
 - 3.4.7. Micrognathia
 - 3.4.8. Nasal Anomalies: Arrhinia, Prosbocyst and Single Nostril
- 3.5. Thoracic Anomalies
 - 3.5.1. Bronchial Atresia
 - 3.5.2. Bronchogenic Cysts
 - 3.5.3. Congenital Upper Airway Obstruction Syndrome
 - 3.5.4. Cystic Pulmonary Adenomatoid Malformation
 - 3.5.5. Pulmonary Sequestration
 - 3.5.6. Diaphragmatic Hernia
 - 3.5.7. Pulmonary Agenesis-Hypoplasia
 - 3.5.8. Pleural Effusion
- 3.6. Abdominal Anomalies
 - 3.6.1. Bladder Exstrophy
 - 3.6.2. Anomaly *Body Stalk*
 - 3.6.3. Sewer
 - 3.6.4. Omphalocele. Gastroschisis
- 3.7. Urinary Tract and Genital Abnormalities
 - 3.7.1. Hydronephrosis
 - 3.7.2. Horseshoe Kidney
 - 3.7.3. Pelvic Kidney
 - 3.7.4. Renal Agenesis. Renal Hipoplasia
 - 3.7.5. Renal Tumors
 - 3.7.6. Multicystic Dysplastic Kidney
 - 3.7.7. Polycystic Kidney Disease.
 - 3.7.8. Urinary Tract Obstructions
 - 3.7.9. Double Kidney Ureterocele

- 3.8. Abnormalities of the Spine, Skeleton and Limbs
 - 3.8.1. Hemivertebra
 - 3.8.2. Open Spina Bifida
 - 3.8.3. Sacrococcygeal Teratoma
 - 3.8.4. Skeletal Dysplasias
 - 3.8.5. Phocomelia
 - 3.8.6. Amniotic Band Syndrome
 - 3.8.7. Arthrogyriposis
 - 3.8.8. Clubfoot Club Hand
 - 3.8.9. Clinodactyly, Ectrodactyly, Polydactyly and Syndactyly
- 3.9. Ultrasound Markers of Aneuploidy in the Second Trimester
- 3.10. Limitations in the Fetal Anatomical Study in the Third Trimester of Gestation

Module 4. Fetal Neurosonography

- 4.1. Systematics of the Fetal Neurosonographic Study
- 4.2. Abnormalities of the Ventricular System
 - 4.2.1. Ventriculomegaly
 - 4.2.2. Hydrocephalus
- 4.3. Midline Anomalies
 - 4.3.1. Holoprosencephaly
 - 4.3.2. CC Agenesis
 - 4.3.3. CSP Agenesis
 - 4.3.4. Interhemispheric Lesions (Cysts, Solid, Vascular, etc.)
- 4.4. Anomalies of the Cerebellum and Posterior Fossa
 - 4.4.1. Blake's Cyst
 - 4.4.2. Megacysterna Magna
 - 4.4.3. Dandy Walker Complex or Cerebellar Vermis Anomalies
 - 4.4.4. Cerebellar Hypoplasia
- 4.5. Vascular Malformations
 - 4.5.1. Aneurysm of the Vein of Galen
 - 4.5.2. Dural Sinus Thrombosis

- 4.6. Space Occupying Anomalies
 - 4.6.1. Intracranial Cystic Lesions
 - 4.6.2. Tumors
- 4.7. Anomalies of Cortical Development
 - 4.7.1. Proliferation: Hemimegalencephaly and Sclerosing Tuberosis
 - 4.7.2. Migration: Heterotopias and Lissencephaly
 - 4.7.3. Organization: Polymicrogyria and Schizencephaly
- 4.8. Destructive CNS Lesions
 - 4.8.1. Hypoxic-Ischemic Lesions
 - 4.8.2. Intracranial Hemorrhages
- 4.9. Neural Tube Lesions
- 4.10. Infections
 - 4.10.1. CMV
 - 4.10.2. Toxoplasmosis
 - 4.10.3. Zika
 - 4.10.4. Herpes
 - 4.10.5. Lues

Module 5. Fetal Echocardiography

- 5.1. Fetal Circulation Congenital Heart Disease Screening and Early Fetal Echocardiography
- 5.2. Septal CHD
 - 5.2.1. VSD
 - 5.2.2. Atrioventricular Septal Defects
- 5.3. Left CC
 - 5.3.1. Aortic Stenosis
 - 5.3.2. Left Cavity Hypoplasia
 - 5.3.3. Pathologies of the Aortic Arch: Coarctation of the Aorta, Interruption of the Aortic Arch
and Anomalies of the Laterality of the Aortic Arch
- 5.4. Right CC
 - 5.4.1. Tricuspid Atresia
 - 5.4.2. Ebstein
 - 5.4.3. Pulmonary Stenosis/Atresia with Intact Septum

- 5.5. Conotruncal CC I
 - 5.5.1. Transposition of Main Arteries
 - 5.5.2. Corrected Transposition
- 5.6. Conotruncal CC II
 - 5.6.1. Tetralogy of Fallot
 - 5.6.2. Double Outlet Right Ventricle
- 5.7. Conotruncal III or Single Arterial Outflow
 - 5.7.1. Truncus Arteriosus
 - 5.7.2. Pulmonary Atresia with VSD
- 5.8. Miscellaneous
 - 5.8.1. Isomerisms
 - 5.8.2. Venous Return Anomalies
 - 5.8.3. Single Ventricle Cardiomyopathies
 - 5.8.4. Tumours
 - 5.8.5. Cardiac Manifestations of Extracardiac Pathology
- 5.9. Fetal Arrhythmias
 - 5.9.1. Irregular Rhythms Extrasystoles
 - 5.9.2. Tachycardias
 - 5.9.3. Bradycardias
- 5.10. Study of Fetal Cardiac Function

Module 6. Placental Pathology and Fetal Growth Restriction

- 6.1. Pathophysiology of Placentation Angiogenic and Anti-Angiogenic Factors
- 6.2. Basis for the Doppler Study
 - 6.2.1. Umbilical Artery
 - 6.2.2. Middle Brain Artery
 - 6.2.3. Uterine Arteries
 - 6.2.4. Aortic Isthmus
 - 6.2.5. Venous Ductus
 - 6.2.6. Umbilical Vein
- 6.3. Early Screening and Prevention of Preeclampsia

- 6.4. Diagnosis and Management of Preeclampsia
 - 6.4.1. Definition
 - 6.4.2. Determination of the Degree of Severity
 - 6.4.3. Treatment
- 6.5. Eclampsia
- 6.6. HELLP Syndrome
- 6.7. Fetal Growth Restriction
 - 6.7.1. Pathophysiological Bases
 - 6.7.2. Classification
 - 6.7.3. Follow-up and Handing
- 6.8. Early Intrauterine Growth Restriction
- 6.9. Late Intrauterine Growth Restriction
- 6.10. Application of the sFlt-1/PlGF Ratio in Clinical Practice

Module 7. Multiple Gestation

- 7.1. Embryology of Multiple Gestation
- 7.2. Early Ultrasound Examination
- 7.3. Chorionicity and Amnionicity
- 7.4. Two-Chorionic Twin Gestation
 - 7.4.1. Obstetric Management
 - 7.4.2. Timing and Route of Delivery
- 7.5. Monochorionic Twin Gestation
 - 7.5.1. Obstetric Management
 - 7.5.2. Timing and Route of Delivery
- 7.6. Multiple Gestation of 3 or More Fetuses
- 7.7. Complications of Monochorionic Gestation I
 - 7.7.1. STFF
 - 7.7.2. Selective RIC
- 7.8. Complications of Monochorionic Gestation II
 - 7.8.1. TRAP
 - 7.8.2. TAPS
- 7.9. Discordant Anomalies
- 7.10. Selective Interruption

Module 8. Diagnosis and Prevention of the Premature Labor

- 8.1. Epidemiology and Impact of Preterm Labor
- 8.2. Types of Prematurity
 - 8.2.1. Spontaneous Pre-Term Birth
 - 8.2.2. Premature Rupture of Membranes
 - 8.2.3. Latrogenic Prematurity
- 8.3. Evaluation of Cervical Length
 - 8.3.1. Indications
 - 8.3.2. Abdomen Route vs Transvaginal
 - 8.3.3. Technique
- 8.4. Early Screening
- 8.5. Medical Treatment for the Prevention of Preterm Birth: Progesterone
- 8.6. Mechanical Treatment for the Prevention of Preterm Birth: Pessary
- 8.7. Surgical treatment for the Prevention of Preterm Birth: Cerclage
- 8.8. Threat of Preterm Labor
 - 8.8.1. Etiology
 - 8.8.2. Diagnosis
 - 8.8.3. Treatment
- 8.9. Corticoids Therapy to Fetal Lung Maturation
 - 8.9.1. Indications
 - 8.9.2. Guidelines
 - 8.9.3. Booster
 - 8.9.4. Controversies
- 8.10. Neuroprophylaxis



Module 9. Maternal-Fetal Pathology

- 9.1. Gestational Loss from the Point of View of Prenatal Diagnosis
 - 9.1.1. Recurrent Miscarriages
 - 9.1.2. Early Miscarriage
 - 9.1.3. Late Miscarriage
 - 9.1.4. Ectopic Pregnancy
 - 9.1.5. Trophoblastic Disease
- 9.2. Abnormalities of Amniotic Fluid
 - 9.2.1. Polyhydramnios and Oligohydramnios
 - 9.2.2. Diagnostic Methods
 - 9.2.3. Study Protocol
 - 9.2.4. Clinical Implications
- 9.3. Placental Abnormalities
 - 9.3.1. Placentomegaly
 - 9.3.2. Placental Lakes, Hematomas and Tumors
 - 9.3.3. Placenta Accrete
- 9.4. Umbilical Cord Anomalies
 - 9.4.1. Anomalous Insertion
 - 9.4.2. The Single Umbilical Artery
 - 9.4.3. Cord Cysts
 - 9.4.4. True Knot
- 9.5. Congenital Infections
 - 9.5.1. TORCH: Toxoplasmosis, Rubella, CMV and Herpes Simplex
 - 9.5.2. Others: Lupus, Varicella and Zika
 - 9.5.3. Parvovirus B19
- 9.6. Rh Isoimmunization
- 9.7. Alloimmune Fetal Thrombocytopenia
- 9.8. Maternal Endocrinology Disease
 - 9.8.1. Diabetes Mellitus
 - 9.8.2. Thyroid Disease
- 9.9. Maternal Rheumatological Disease
- 9.10. Maternal Cardiopathy

Module 10. Intrauterine Fetal Therapy and Invasive Procedures

- 10.1. Principles of Fetal Therapy
- 10.2. Formation in Fetal Surgery and Other Invasive Procedures
 - 10.2.1. Referral Centers
 - 10.2.2. Learning Curve and Maintenance of Skills
- 10.3. Invasive Procedures
 - 10.3.1. Amniocentesis, Chorionic Biopsy and Cordocentesis
 - 10.3.2. Indications and Technique
 - 10.3.3. Contribution of Invasive Procedures in Fetal Surgeries
- 10.4. Fetal and Maternal Analgesia and Anesthesia
- 10.5. EXIT Surgery
 - 10.5.1. Concept and Indications
 - 10.5.2. Surgical Evolution and Technique
- 10.6. Prenatal Treatment of Spina Bifida
 - 10.6.1. Indications and Approaches
 - 10.6.2. Prognosis and Post-Surgical Results
- 10.7. Ultrasound-Guided Procedures
 - 10.7.1. *Shunts*
 - 10.7.2. Intrauterine Transfusion
 - 10.7.3. Selective Cord Occlusion
 - 10.7.4. Amnioinfusion/Amniodrainage
- 10.8. Fetoscopic Procedures
 - 10.8.1. Clinical Situations Susceptible to Prenatal Surgery: CDH, Flanges, CM, etc
 - 10.8.2. Approach, Indications and Technique
 - 10.8.3. Postnatal Results
- 10.9. Cardiac Interventionism and Treatment of Arrhythmias
- 10.10. Present and Future of Fetal Surgery

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 Professional Master's Degree in Fetal Medicine and Prenatal Diagnosis guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Global University.



“

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This program will allow you to obtain your **Professional Master's Degree diploma in Fetal Medicine and Prenatal Diagnosis** 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: **Professional Master's Degree in Fetal Medicine and Prenatal Diagnosis**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**

tech global university

Mr./Ms. _____ with identification document _____
has successfully passed and obtained the title of:

Professional Master's Degree in Fetal Medicine and Prenatal Diagnosis

This is a program of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



Dr. Pedro Navarro Illana
Chancellor




Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: APWOR0235 techmule.com/certificates


Professional Master's Degree in Fetal Medicine and Prenatal Diagnosis

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
Total	60

General Structure of the Syllabus			
Year	Subject	ECTS	Type
1º	Fetal Medicine	6	CO
1º	Screening of Chromosome Abnormalities	6	CO
1º	Morphological Ultrasound	6	CO
1º	Fetal Neurosonography	6	CO
1º	Fetal Echocardiography	6	CO
1º	Placental Pathology and Fetal Growth Restriction	6	CO
1º	Multiple Gestation	6	CO
1º	Diagnosis and Prevention of the Premature Labor	6	CO
1º	Maternal-Fetal Pathology	6	CO
1º	Intrauterine Fetal Therapy and Invasive Procedures	6	CO



Dr. Pedro Navarro Illana
Rector



*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.



Professional Master's Degree

Fetal Medicine and
Prenatal Diagnosis

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Professional Master's Degree

Fetal Medicine and Prenatal Diagnosis