

# Postgraduate Certificate

## Fetal Neurosonography and Central Nervous System Anomalies





## Postgraduate Certificate Fetal Neurosonography and Central Nervous System Anomalies

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/in/medicine/postgraduate-certificate/fetal-neurosonography-central-nervous-system-anomalies](http://www.techtute.com/in/medicine/postgraduate-certificate/fetal-neurosonography-central-nervous-system-anomalies)

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# 01

# Introduction

The advances in Fetal Neurosonography and Central Nervous System Anomalies experienced in recent years have favored the effective early detection of possible neurological anomalies in the fetus. As a result, it is possible to establish agile interventions that improve the prognosis of the newborn, thus guaranteeing its optimal quality of life. Given the benefits offered by these cutting-edge procedures, physicians are obliged to be aware of them in order to optimize their professional update. Accordingly, TECH has designed this program, which addresses the latest techniques for measuring brain structures or evaluating hemorrhagic or ischemic pathologies of the Central Nervous System. Because of this, in a 100% online mode and from home, the student will avoid being left behind with respect to the advances in their sector.





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*Through this Postgraduate Certificate, you will learn the state-of-the-art protocols to evaluate hemorrhagic or ischemic pathologies of the Central Nervous System”*

Fetal Neurosonography is a crucial tool for the early detection of neurological abnormalities in the fetus, allowing the planning of neonatal care and the most appropriate treatment to ensure the physical integrity of the newborn at delivery. This not only improves their prognosis, but also makes it possible to avoid serious complications that may arise during the process. Therefore, being constantly updated in this field is essential to improve medical practice and ensure the welfare of the little ones.

For this reason, TECH has designed this comprehensive program, which aims to provide specialists with the most cutting-edge knowledge in the field of Fetal Neurosonography. Throughout this academic itinerary, students will be able to delve into the updated techniques for the detection of ischemic and hemorrhagic pathologies or tumors and vascular anomalies. They will also delve into recent advances in the use of magnetic resonance imaging for the study of the central nervous system.

The Postgraduate Certificate in Fetal Neurosonography and Central Nervous System Anomalies is taught 100% online, which allows professionals to enjoy the contents and academic resources from anywhere and 24 hours a day. Likewise, the program uses the *Relearning* pedagogical methodology, which encourages autonomous learning and the active participation of students, enjoying their own study rhythms and being able to adapt the teaching to their particular needs.

This **Postgraduate Certificate in Fetal Neurosonography and Central Nervous System Anomalies** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ◆ The development of practical cases presented by experts in Obstetric and Gynecologic Ultrasound
- ◆ 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 self-assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ 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



*Be able to learn the state-of-the-art techniques for detecting tumors and vascular anomalies in the fetus thanks to this program"*



“

*Study by means of the most avant-garde multimedia didactic formats of the pedagogical panorama”*

The program includes in its teaching staff professionals from the sector who bring to this training the experience of their work, as well as recognized specialists from prestigious reference societies and 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 situations of professional practice that arise throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

*Enjoy a 100% online teaching modality that will allow you to study from your own home.*

*Get up to date in Fetal Neurosonography and Central Nervous System Anomalies with the best learning facilities in the academic environment.*



# 02 Objectives

The design of this Postgraduate Certificate has been carried out with the idea in mind to provide the specialist with the most relevant and updated knowledge in Fetal Neurosonography and Central Nervous System Anomalies. Through this academic experience, you will delve into the latest scientific evidence in this field, positioning yourself at the forefront of this branch of medicine. In addition, your learning will be guaranteed through the achievement of the following general and specific objectives.





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*Do you want to be updated in Fetal Neurosonography and Central Nervous System Anomalies from your own home and without neglecting your professional and personal duties? This program is your best ally!”*



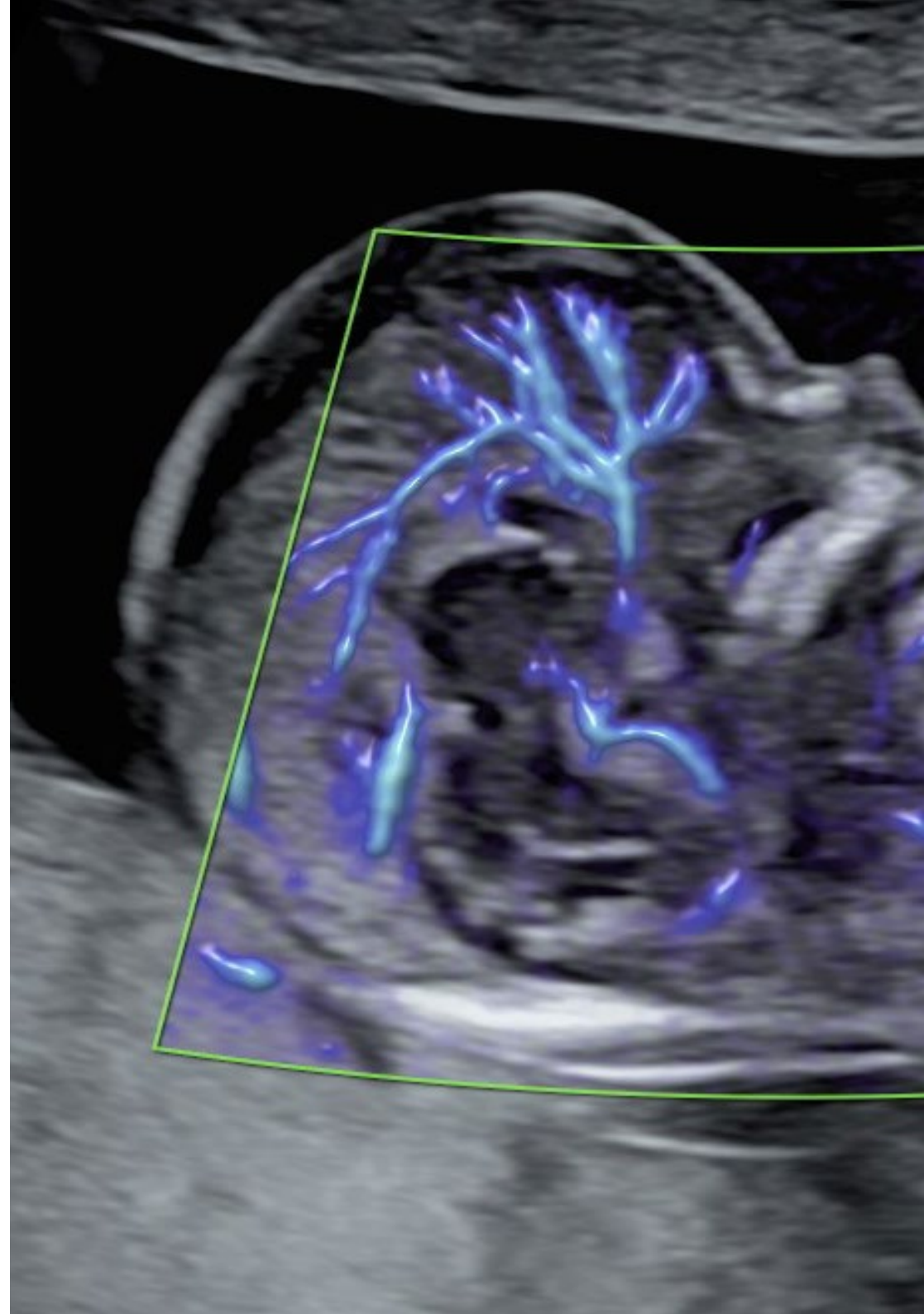
## General Objectives

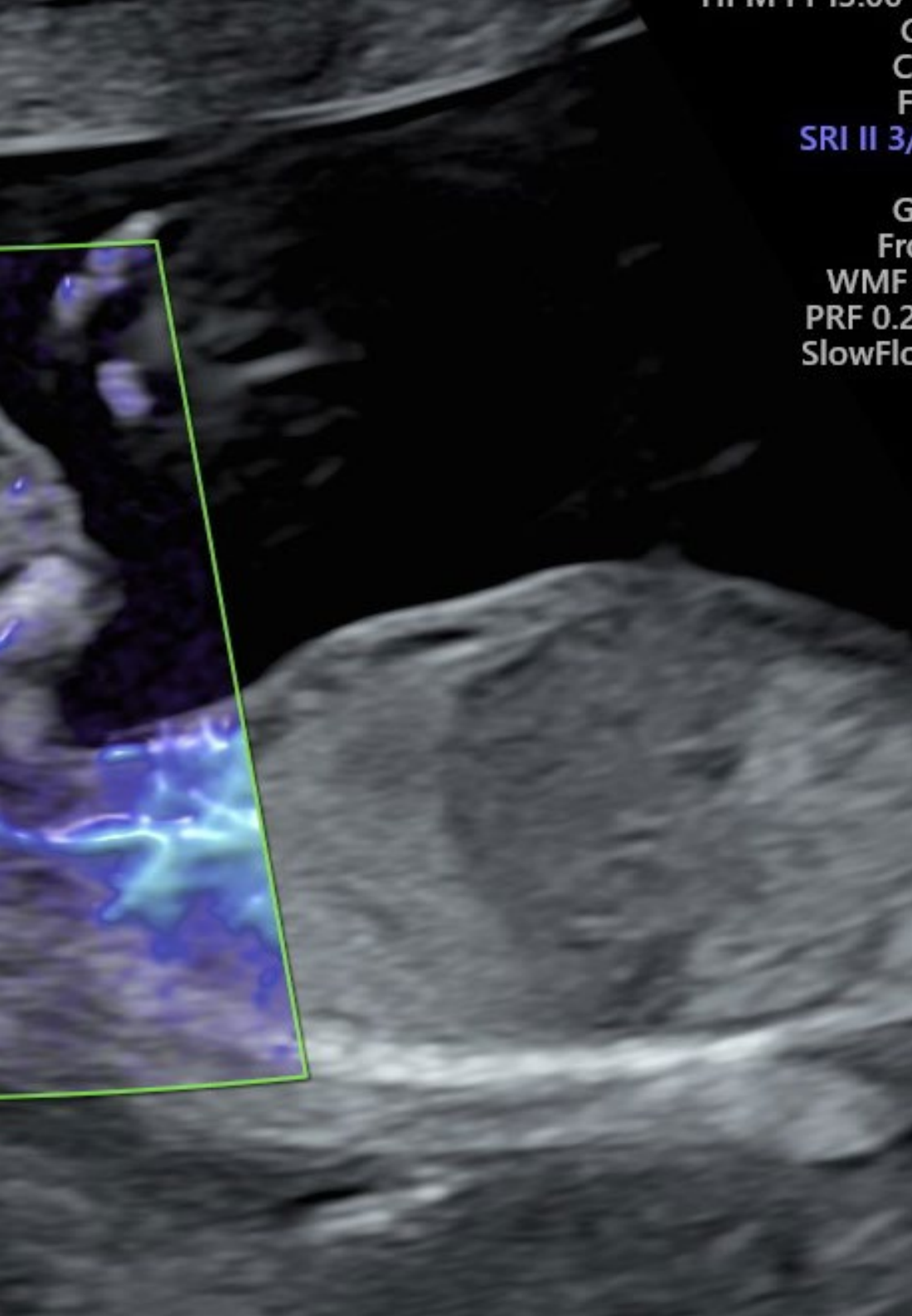
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- ◆ Get to know in depth the normal gynecological and obstetric ultrasound study, as well as the most used techniques
- ◆ Have an in-depth knowledge of the malformations that can be diagnosed in the first trimester of gestation and the ultrasound markers, as well as the invasive techniques and screening for aneuploidy and preeclampsia and the usefulness of fetal DNA in maternal blood
- ◆ Study the diagnosable pathology in the third trimester as well as intrauterine growth restriction and fetal hemodynamics, correctly applying maternal-fetal Doppler
- ◆ Learn the most important concepts about fetal neurosonography and echocardiography as well as the most relevant pathologies
- ◆ Study multiple gestation (monochorionic and bicorionic) and its most frequent complications



*Adopt in your daily practice the recent advances in Fetal Neurosonography and Central Nervous System Anomalies in only 6 weeks"*





## Specific Objectives

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- ◆ Study the normal neurosonographic study and its main ultrasound sections
- ◆ Study the diagnosis of ventriculomegaly, its diagnosis and prognosis
- ◆ Know in depth the midline anomalies in the central nervous system, their diagnosis and prognosis
- ◆ Learn the main anomalies of the posterior fossa, their diagnosis and prognosis
- ◆ Learn the main cystic pathologies of the central nervous system, their diagnosis and prognosis
- ◆ Study the main hemorrhagic or ischemic pathologies of the central nervous system, their diagnosis and prognosis
- ◆ Learn the main tumors of the central nervous system and their correct ultrasound diagnosis
- ◆ Learn the main applications of fetal MRI in the study of the central nervous system

# 03

## Course Management

The teaching team of this Postgraduate Certificate has been carefully selected by TECH and is formed by highly qualified experts in the field of Obstetric and Gynecological Ultrasound. These specialists will be in charge of directing and teaching the program, and have developed the didactic contents to ensure that the knowledge acquired will be valuable for daily medical practice.





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*This program is directed and taught by the best specialists in Fetal Neurosonography and Central Nervous System Anomalies, who will provide you with the most updated knowledge in this field"*

## Management



### Dr. García-Manau, Pablo

- ◆ Obstetrician and Gynecologist at Quirónsalud Hospital in Barcelona
- ◆ Assistant Physician of the Gynecology and Obstetrics Service at the University Hospital of Santa Creu i Sant Pau
- ◆ Specialist in Maternal-Fetal Medicine
- ◆ Specialist in Obstetric Ultrasound and Fetal Echocardiography
- ◆ Member of: Catalan Society of Obstetrics and Gynecology (SCOG) and Spanish Society of Gynecology and Obstetrics (SEGO)

## Professors

### Dr. Grau Company, Laia

- ◆ Specialist in Obstetrics and Gynecology at the Germans Trias i Pujol University Hospital. Badalona, Spain
- ◆ Specialist in Maternal-Fetal Medicine at the University Hospital Germans Trias i Pujol
- ◆ Member of: Fetal Neurology Working Group of the Germans Trias i Pujol University Hospital
- ◆ Training stay in Fetal Medicine at the Center for Maternal, Fetal and Neonatal Medicine of Barcelona, BCNatal
- ◆ Collaborating Professor of Obstetrics and Gynecology

### Dr. Zientalska Fedonczuk, Aneta

- ◆ Coordinator of the Fetal Medicine Unit of the Obstetrics Department at the Germans Trias i Pujol University Hospital
- ◆ Member of: Fetal Cardiology Working Group at the Germans Trias i Pujol University Hospital
- ◆ Ultrasound and Fetal Medicine Section of the Academy of Medical Sciences of Catalonia and Balearic Islands
- ◆ First Trimester Ultrasound Quality Control Group of the Departament de Salut de la Generalitat de Catalunya
- ◆ Specialist in Obstetrics and Gynecology at the Germans Trias i Pujol University Hospital



**Dr. Hurtado Lupiáñez, Iván**

- ◆ Specialist in Obstetrics and Gynecology at the Germans Trias i Pujol University Hospital. Badalona, Spain
- ◆ Specialist in Maternal-Fetal Medicine in the Fetal Neurology working group at the Germans Trias i Pujol University Hospital
- ◆ Interuniversity Diploma in Fetal Medicine awarded by the Sorbonne Universités at the Pierre and Marie Curie Faculty. Paris
- ◆ Associate Professor in Obstetrics and Gynecology
- ◆ PhD in Pediatrics, Obstetrics and Gynecology from the Autonomous University of Barcelona

**Dr. Maroto, Anna**

- ◆ Chief of Gynecology and Obstetrics Service at the University Hospital Doctor Josep Trueta
- ◆ Specialist in Fetal Medicine
- ◆ Associate Professor at University of Girona
- ◆ Member of the Ultrasound and Fetal Medicine Section of the Catalan Society of Obstetrics and Gynecology (SCOG)
- ◆ PhD from the Autonomous University of Barcelona

**Dr. Rodó, Carlota**

- ◆ Attending Physician of the Obstetrics Service at the Vall d'Hebron University Hospital
- ◆ Specialist in Prenatal Diagnosis and Fetal Medicine and Maternal-Fetal neurosonography
- ◆ PhD from the Autonomous University of Barcelona
- ◆ Member of the Spanish Association of Prenatal Diagnosis (AEDP) and of the Ultrasound Section of the Catalan Society of Obstetrics and Gynecology (SCOG)
- ◆ Member of: Spanish Society of Gynaecology and Obstetrics (SEGO)

**Dr. Martínez, Clara**

- ◆ Specialist in the Department of Gynecology and Obstetrics at Hospital Josep Trueta
- ◆ Specialist in Prenatal Diagnosis
- ◆ Member of: Spanish Obstetric Safety Group



*Make the most of this opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

# 04

# Structure and Content

The content of the Postgraduate Certificate has been carefully planned with the aim of providing specialists with up-to-date information on the latest trends in Fetal Neurosonography and Central Nervous System Anomalies. To achieve this goal, a variety of didactic resources have been included in different formats, including videos, reading materials and interactive summaries, which provide students with the convenience and flexibility needed to keep up to date in this area. In addition, the online modality of the course allows experts to adapt their study schedule to their professional and personal requirements and responsibilities.

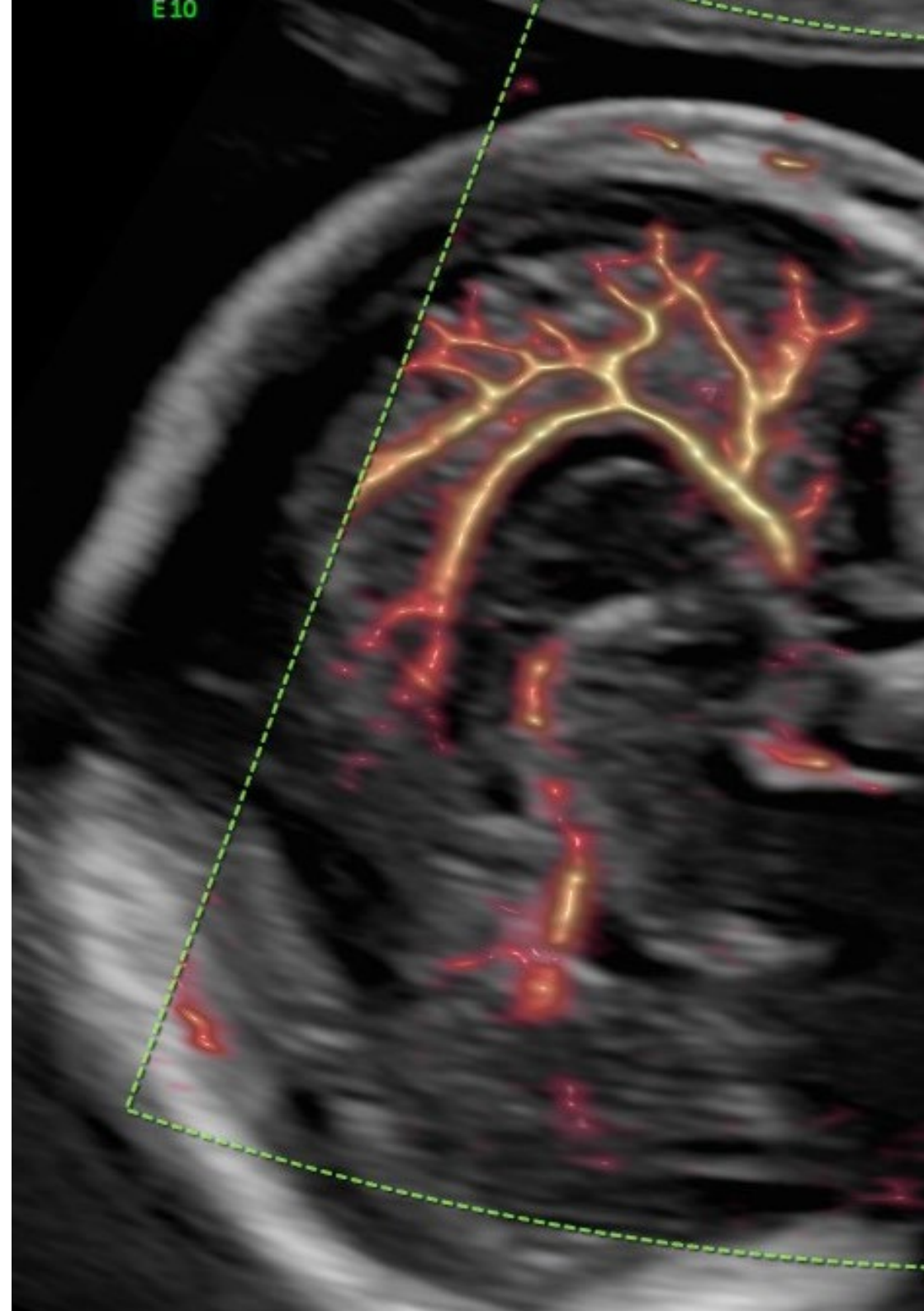


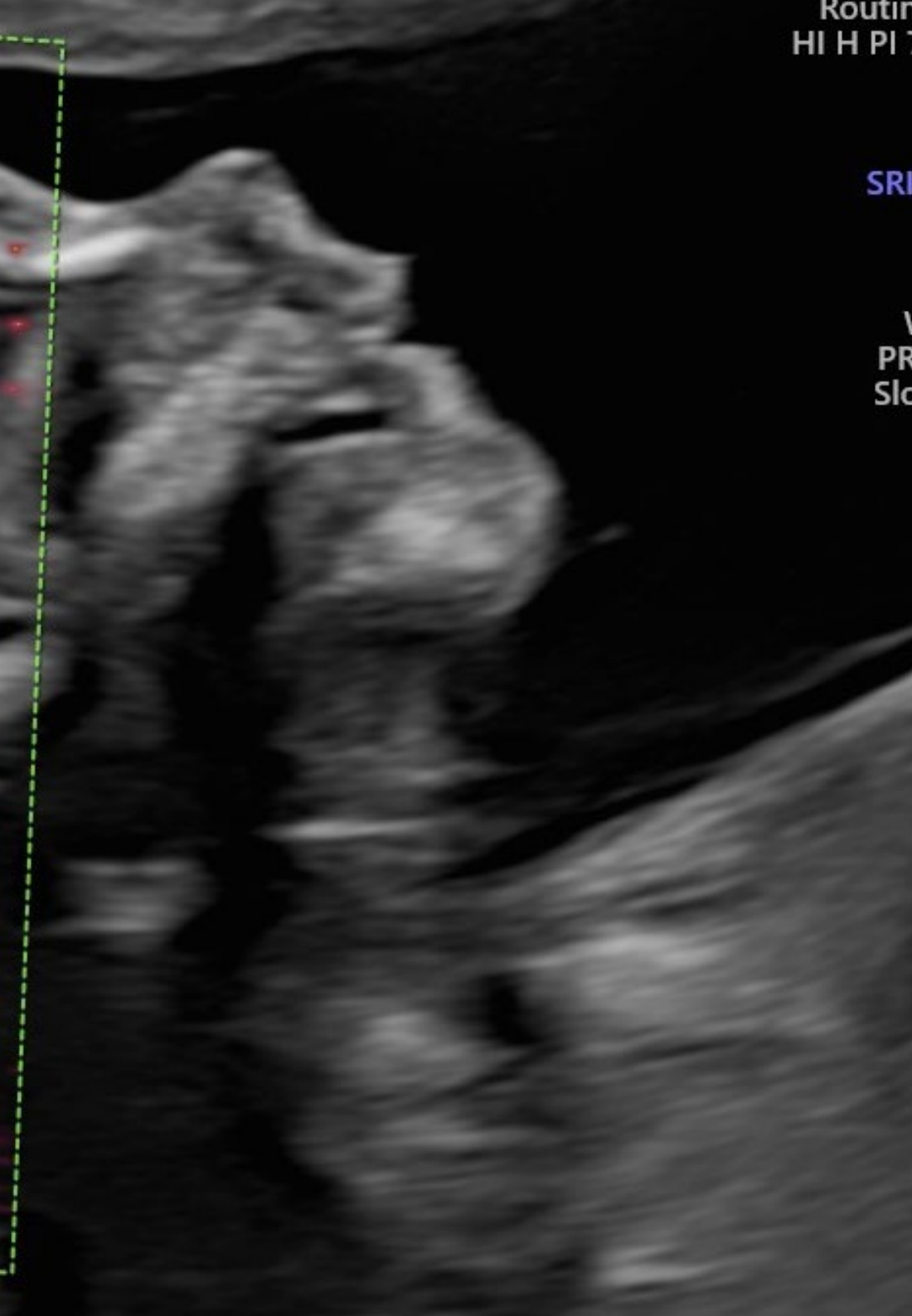
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*It has a syllabus designed by specialists with extensive health experience in Fetal Neurosonography and Central Nervous System Anomalies"*

## Module 1. Fetal Neurosonography and Central Nervous System Anomalies

- 1.1. Fetal Neurosonography and Central Nervous System Anomalies Normality
  - 1.1.1. Indications for Fetal Neurosonography and Central Nervous System Anomalies
  - 1.1.2. Fetal Neurosonography and Central Nervous System Anomalies Technique
  - 1.1.3. Measurement of Brain Structures
- 1.2. Alterations of the Head Circumference and the Skull
  - 1.2.1. Microcephaly
  - 1.2.2. Macrocephaly
  - 1.2.3. Encephalocele
  - 1.2.4. Other Alterations
- 1.3. Ventriculomegaly
  - 1.3.1. Ultrasound Diagnosis
  - 1.3.2. Etiology
  - 1.3.3. Associated Anomalies and Study
  - 1.3.4. Prognosis
  - 1.3.5. Recurrence
- 1.4. Midline Anomalies
  - 1.4.1. Corpus Callosum Anomalies
  - 1.4.2. Absence of cavum septi pellucidi
  - 1.4.3. Holoprosencephaly
- 1.5. Posterior Fossa Anomalies
  - 1.5.1. Dandy Walker Malformation
  - 1.5.2. Megacisterna Magna
  - 1.5.3. Blake's Cyst
  - 1.5.4. Vermis Hypoplasia
  - 1.5.5. Other Anomalies
- 1.6. Cystic Pathology of the Central Nervous System
  - 1.6.1. Choroid Plexus Cyst
  - 1.6.2. Connatal Cyst
  - 1.6.3. Arachnoid Cyst
  - 1.6.4. Other Alterations





- 1.7. Ischemic/Hemorrhagic Pathology of the Central Nervous System
  - 1.7.1. Porencephaly
  - 1.7.2. Schizencephaly
  - 1.7.3. Other Ischemic and Hemorrhagic Injuries
- 1.8. Tumors of the Central Nervous System and Vascular Anomalies
  - 1.8.1. Teratoma
  - 1.8.2. Tuberous Sclerosis
  - 1.8.3. Aneurysm of Galen's Vein
  - 1.8.4. Thrombosis of Dural Venous Sinuses
- 1.9. Sulcation Anomalies
  - 1.9.1. Introduction
  - 1.9.2. Lissencephaly
  - 1.9.3. Hemimegalencephaly
- 1.10. Magnetic Resonance Imaging in the Study of the Central Nervous System
  - 1.10.1. Introduction
  - 1.10.2. Indications
  - 1.10.3. Adequate Gestational Age for Fetal MRI
  - 1.10.4. Usefulness of Fetal MRI in the Study of the Nervous System



*Learn through formats such as video or interactive summary for a completely enjoyable and effective teaching"*



05

# 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.







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*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.

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*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.



# 06 Certificate

The Postgraduate Certificate in Fetal Neurosonography and Central Nervous System Anomalies guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Fetal Neurosonography and Central Nervous System Anomalies** contains the most complete and up-to-date scientific on the market.

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

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

Title: **Postgraduate Certificate in Fetal Neurosonography and Central Nervous System Anomalies**

Official N° of Hours: **150 h.**



\*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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