

Postgraduate Diploma

Fertility Preservation: Indications and Techniques. Cryobiology

Endorsed by:





Postgraduate Diploma Fertility Preservation: Indications and Techniques. Cryobiology

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-fertility-preservation-indications-technique-cryobiology

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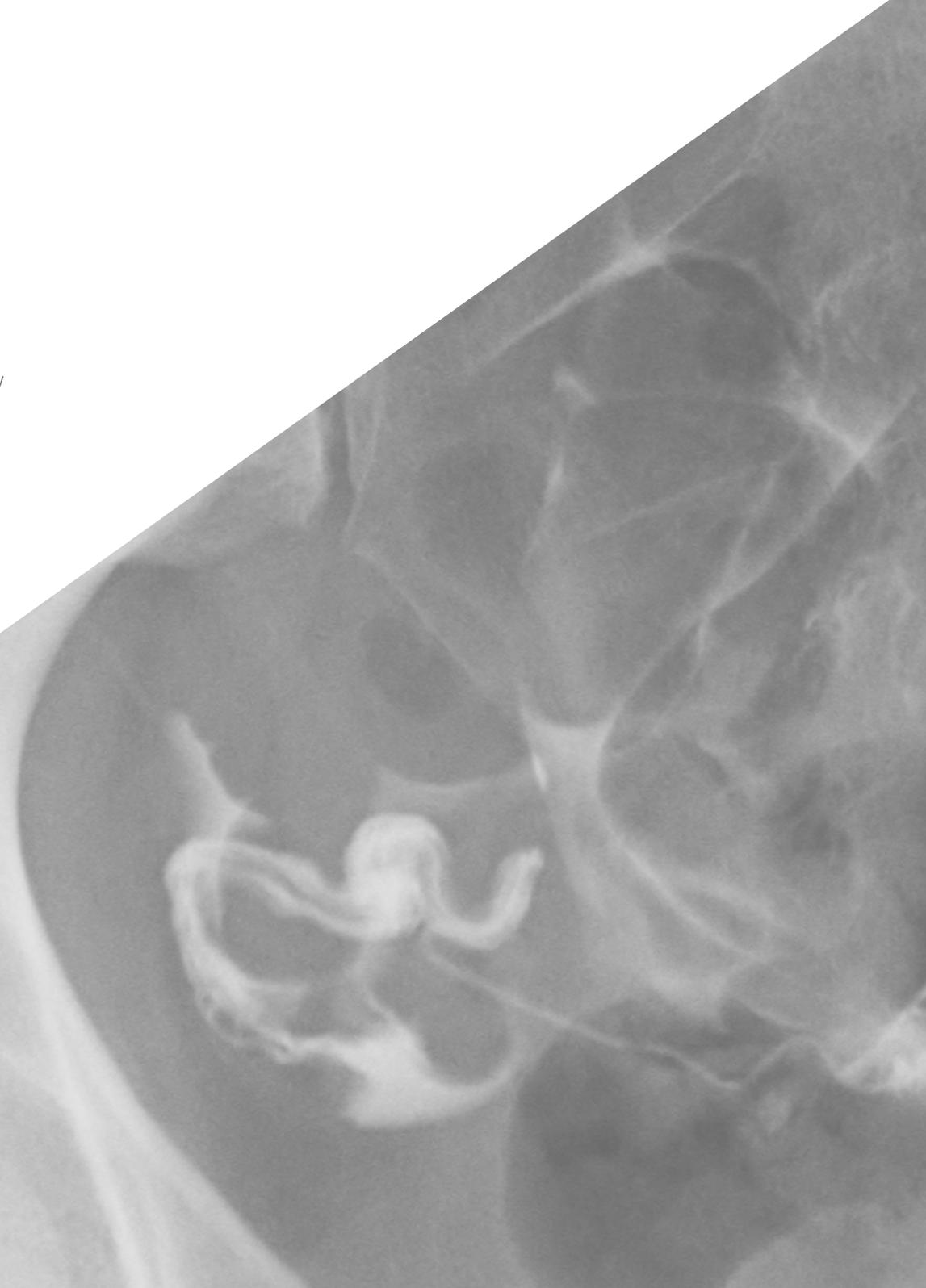
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01

Introduction

Fertility Preservation in assisted reproduction requires professional knowledge that integrates all the advances in this sector. In this program, we incorporate the advances that research has contributed to this field, both in the field of diagnosis and in laboratory techniques and clinical approach. This program offers all the necessary expertise to be part of the medical forefront in this field.





A Postgraduate Diploma that will allow you to incorporate the latest advances in the diagnosis and approach to your patients with fertility problems into your professional practice, from the specific perspective of fertility preservation"

Infertile women's assessment begins by knowing their ovarian reserve through, fundamentally, the ultrasound count of antral follicles (AFR) and the determination in blood of the anti-mullerian hormone (AMH), which has emerged as a quite specific diagnostic test and has largely replaced the use of other hormonal determinations such as FSH, LH and estradiol, which were traditionally performed in the first phase of the cycle.

While reproductive treatments such as IVF-ICSI facilitate the fertilization of the egg with the sperm in situations where the anatomy is distorted, improving gestation rates (e.g., in tubal obstructive factors), in some situations, these anatomical disorders can negatively influence implantation after embryo transfer. There are obvious cases of endometrial and submucosal polyps, but also the existence of hydrosalpinx (whose contents could drain into the uterine cavity exerting an embryotoxic effect) and other anatomical disorders, which are described in the module.

Throughout this educational program, we will review the most frequent possible surgical indications that may arise in the context of infertility: endometriosis, adenomyosis, hydrosalpinx, myomas, uterine alterations, as well as the possible indications for tubal surgery in certain patients that could avoid the use of assisted reproduction techniques. All this through the most effective methodology and 100% online.

“*A high-impact educational course, supported by high-quality multimedia content, expert analysis of clinical cases, master classes and video techniques*”

This **Postgraduate Diploma in Fertility Preservation: Indications and Techniques.**

Cryobiology contains the most complete and up-to-date scientific program on the market.

Its most outstanding features are:

- ♦ The latest technology in online teaching software
- ♦ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ♦ Practical cases presented by practicing experts
- ♦ State-of-the-art interactive video systems.
- ♦ Teaching supported by telepractice
- ♦ Continuous updating and recycling systems
- ♦ Autonomous learning: full compatibility with other occupations
- ♦ Practical exercises for self-assessment and learning verification
- ♦ Support groups and educational synergies: questions to the expert, debate and knowledge forums.
- ♦ Communication with the teacher and individual reflection work
- ♦ Content that is accessible from any fixed or portable device with an Internet connection
- ♦ Supplementary documentation databases are permanently available, even after the course



With a methodological design based on proven teaching techniques, this program will take you through different teaching approaches to allow you to learn in a dynamic and effective way”

Our teaching staff is composed of medical professionals, practising specialists. In this way we ensure that we deliver the educational update we are aiming for. A multidisciplinary team of professors with specialized and experienced doctors in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will bring their practical knowledge derived from their own experience to the course: one of the differential qualities of this Postgraduate Diploma.

The efficiency of the methodological design of this master's degree, enhances the student's understanding of the subject. Developed by a multidisciplinary team of *e-Learning* experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need for your training.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use *telepractice* learning: with the help of an innovative interactive video system, and *learning from an expert*, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

Our innovative telepractice concept will give you the opportunity to learn through an immersive experience, which will provide you with a faster integration and a much more realistic view of the contents: “learning from an expert”.

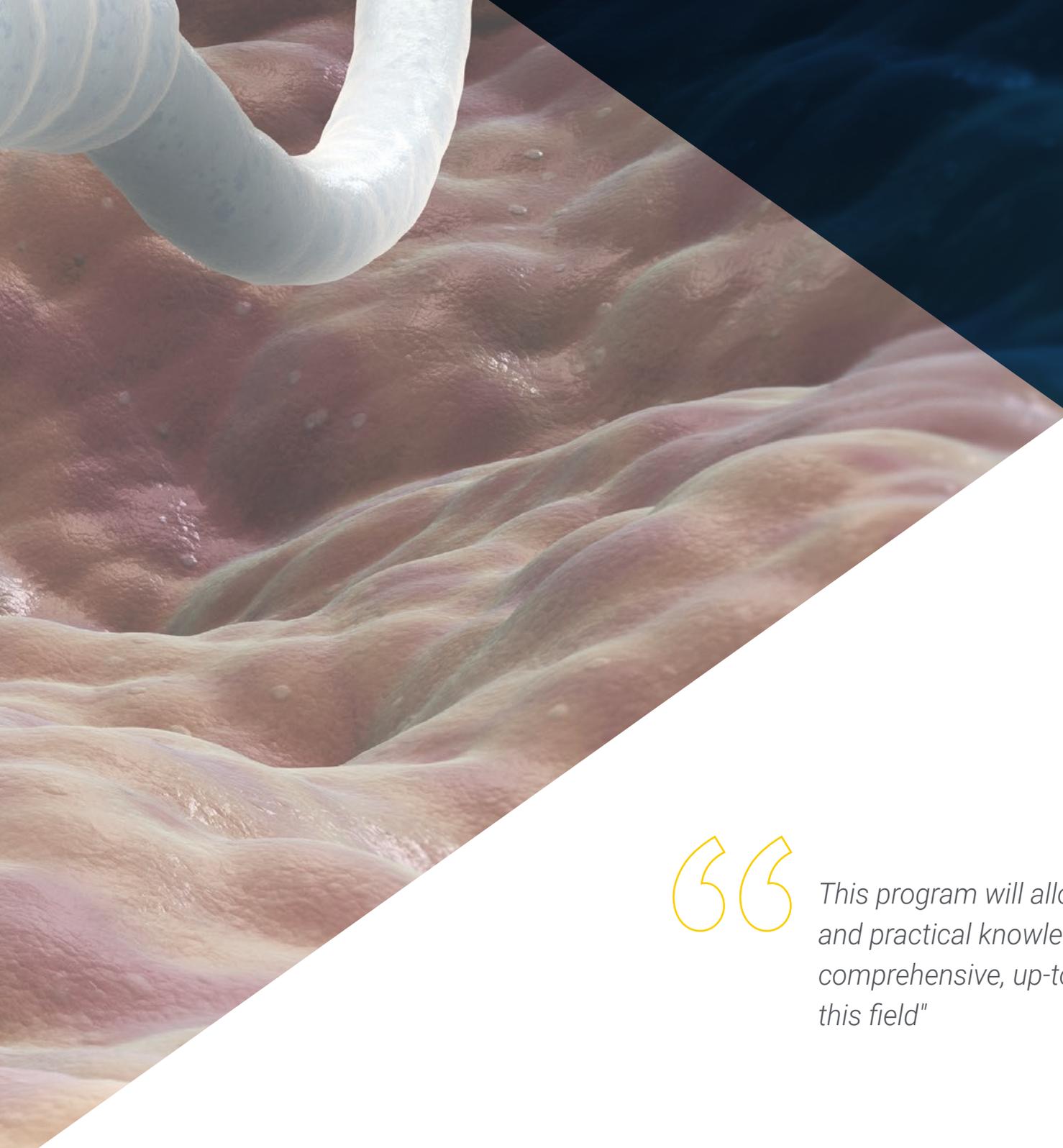
You will be taught by professionals with extensive experience in the sector, who have contributed all their knowledge and experience in the development of this program.



02 Objectives

This main objective of this Postgraduate Diploma is to bring the students' knowledge up to date in all areas surrounding decision-making during the evaluation of the patient and their partner. This includes the diagnosis, prognosis and the subsequent treatments. A structured approach in all areas related to assisted reproduction, that will allow you to make a leap in your professional career with the expertise of the best online university in the world.





“

This program will allow you to acquire the theoretical and practical knowledge in this area, with the most comprehensive, up-to-date and advanced knowledge in this field"



General Objectives

- ♦ Acquire up-to-date concepts in anatomy, physiology, embryology and genetics, which will help to understand reproductive diagnostics and treatments.
- ♦ Understand in detail the aspects related to the initial assessment of a sterile couple. Study criteria and referral to Reproduction Units. Basic clinical examination, request and interpretation of the results of complementary tests
- ♦ Perform an appropriate assessment and clinical orientation of the couple. Indication of request for specific tests based on the above findings
- ♦ Have an exhaustive knowledge of the different types of medical treatment, indications and their choice according to the profile of the patient and their partner
- ♦ Know the indications and surgical techniques that could improve the reproductive results of our patients. Alterations in uterine morphology (congenital or acquired). Endometriosis. Tubal Surgery
- ♦ Know the techniques used in the Andrology, IVF and cryobiology laboratories. Diagnostic techniques and sperm selection techniques. Oocyte evaluation. Embryonic Development
- ♦ Describe the types of genetic embryonic studies that are available, know their possible indications and be able to interpret the results
- ♦ Know the current legal situation of the treatments for assisted reproduction in our country
- ♦ Know the main scientific and patient societies in the field of Reproductive Medicine





Specific Objectives

Module 1. Gamete Interaction Fertilization Embryonic Development

- ♦ Differentiate the different reproductive techniques: ovulation stimulation, artificial insemination and In Vitro Fertilization with or without sperm microinjection
- ♦ Detail the indication of the different reproductive techniques
- ♦ Understand the possibility of using reproductive techniques with donor gametes
- ♦ Know the different adjuvant treatments that could be used in patients diagnosed with low ovarian reserve
- ♦ Manage the different types of ovulation induction according to the patient's profile
- ♦ Know the usual artificial insemination and vitro fertilization cycles

Module 2. Gamete and Embryo Cryopreservation

- ♦ Study the Indications of the "Freeze All"
- ♦ Know and manage the possible complications derived from assisted reproduction treatments
- ♦ Analyze the drugs used for the endometrial preparation of substituted embryo cryotransfer cycles
- ♦ Update the different luteal phase support protocols
- ♦ Develop gamete handling in the laboratory
- ♦ Know the embryo biopsy techniques according to the stage of embryo division
- ♦ Know the embryo biopsy techniques according to the technology used and the existing means in each laboratory
- ♦ Analyze the indications for fertility preservation in the male
- ♦ Study the techniques used in sperm cryopreservation and their efficiency
- ♦ Delve into the indications for fertility preservation in women
- ♦ Know the techniques used in oocyte cryopreservation and their efficiency
- ♦ Know the techniques used in ovarian tissue cryopreservation and their efficiency

Module 3. Fertility Preservation

- ♦ Study the European standards to establish the minimum criteria required in Reproduction Units (ISO/UNE)
- ♦ Study in depth the definitions and indications for the study of the couple with repeated miscarriages or implantation failures
- ♦ Develop the level of evidence for each of the requested tests
- ♦ Gain knowledge the different treatment options
- ♦ Study the impact of endometriosis on fertility
- ♦ Analyze the possible surgical indications in patients with endometriosis and infertility
- ♦ Know the impact of adenomyosis on fertility
- ♦ Develop possible surgical indications in patients with adenomyosis and infertility
- ♦ Understand the impact of the hydrosalpinx on fertility and its surgical indication prior to In Vitro Fertilization

“ *A program designed to allow professionals to study in a comfortable and efficient way, optimizing their efforts* ”

03

Course Management

For our Postgraduate Diploma to be of the highest quality, we are proud to work with teaching staff of the highest level, chosen for their proven track record in the field of education. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.



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An impressive teaching staff, made up of professionals from different fields of expertise, will be your teachers during your education: a unique opportunity not to be missed”

Management



Dr. Iniesta Pérez, Silvia

- Coordinator of the Reproduction Unit at La Paz University Hospital.
- Degree in Medicine and Surgery from the University of Alcalá, Madrid
- Specialist in Obstetrics and Gynecology, via MIR. Santa Cristina University Hospital, Madrid
- Doctorate Courses at the Autonomous University of Madrid
- Research Sufficiency in the Department of Obstetrics and Gynecology, Universidad Autónoma de Madrid, Qualification: Outstanding.
- Doctoral Thesis, Obstetrics and Gynecology Department, Autonomous University of Madrid Outstanding- Cum Laude
- Levels I, II, III and IV obstetric-gynecological ultrasound (SESEGO accreditation)
- Professional Master's Degree in Human Reproduction IVI
- Professional Master's Degree in Genomics and Medical Genetics 2nd edition, Granada University
- Online Master's Degree in Minimally Invasive Surgery in Gynecology. CEU Cardenal Herrera University
- Masterclass Patient-Centered Clinical Management. Deusto Business School, Madrid
- Area Specialist Doctor at the Santa Cristina University Hospital, Madrid
- Interim Labor Doctor, Hospital Infanta Sofía, Madrid
- Physician on Secondment at the Hospital Universitario La Paz



Dr. Franco Iriarte, Yosu

- ♦ Laboratory and scientific director, International Ruber Hospital
- ♦ Head of the Assisted Reproduction Laboratory of the Virgen del Pilar Health Centre in San Sebastián
- ♦ Head of the Assisted Reproduction Laboratory of Policlínica Guipúzcoa, including the laboratory of Clínica del Pilar
- ♦ Collaboration with the Assisted Reproduction Center, Navarro Medical Center
- ♦ Senior Embryologist at Cornell University Hospitals of New York and RMA of New Jersey
- ♦ Creation of the company Donostia Basque Institute of Fertility located in Onkologikoa. Managing Director.
- ♦ Managing Director of the Donostia Basque Institute of Fertility.
- ♦ Graduate in Biology, University of Navarra (Fundamental and Health Specialty)
- ♦ CAP Qualification (Certificate of Pedagogical Competency)
- ♦ PhD in Science from the University of Navarra. Thesis Title: "Genetic risk factors for venous thrombosis"
- ♦ University Specialist in Assisted Reproduction: Psychological and Legal Aspects from the Complutense University of Madrid.
- ♦ Discussion Table Moderator of the North Forum Reproduction Units on embryonic and oocyte morphological criteria and embryo freezing.
- ♦ Postgraduate Certificate in Nursing. UPV-EHU "Donostia School of Nursing" Donostia- San Sebastián
- ♦ Professional Master's Degree in "Genetic Counseling". San Pablo University CEU in Madrid

Professors

Ms. Fernández Díaz, María

- ♦ Director of Ergo Clinic and responsible for the Assisted Reproduction Department
- ♦ Degree in Biochemistry. Faculty of Medicine and Health Sciences, University of Oviedo.
- ♦ Degree in Chemistry. Faculty of Chemical Medicine, University of Oviedo
- ♦ PhD student in Molecular and Cellular Biology. University of Oviedo
- ♦ Official Master's Degree in Reproductive Biology and Technology University of Oviedo
- ♦ Professional Master's Degree in Cancer Research University of Oviedo
- ♦ Postgraduate Degree in Medical Genetics. University of Valencia

Dr. Gayo Lana, Abel

- ♦ Co-Director of the ERGO Clinic. Embryology Laboratory Director
- ♦ PhD in Biology (outstanding Cum Laudem), PhD Program in Biochemistry and Molecular Biology, Department of Functional Biology, University of Oviedo
- ♦ Professional Master's Degree in Human Reproduction, Spanish Fertility Society (SEF) and Complutense University of Madrid
- ♦ Degree in Biology. Faculty of Biology Medicine, University of Oviedo
- ♦ Official Degree: Senior Embryologist of ESHRE
- ♦ ASEBIR Certification in Assisted Human Reproduction. Clinical Embryology

Ms. Sotos Borrás, Florencia

- ♦ Graduate in Biological Sciences. Specialist in Biochemistry and Molecular Biology. Autonomous University of Madrid
- ♦ Radioactive Facilities Supervisor Certification, Specialty in Biomedicine and Research. Infocitec
- ♦ IVF-Genetics-Andrology at Hospital Ruber Internacional.

Dr. Cuevas Saiz, Irene

- ♦ Accredited by the ASEBIR as a Specialist in Assisted Human Reproduction Clinical Embryology.
- ♦ Official Master's Degree in Biotechnology of Assisted Human Reproduction, University of Valencia.
- ♦ Professional Master's Degree in Human Reproduction
- ♦ Doctoral Candidate in Obstetrics, Gynecology and Regenerative Medicine, Research Plan Title: "Embryo selection by non-invasive techniques: combining morphology.

Dr. Sole Inarejos, Miquel

- ♦ Senior Embryologist of the In Vitro Fertilization Laboratory and Head of the Cryobiology Department, Dexeus University Hospital
- ♦ Degree in Biology and Biochemistry
- ♦ D. in Cell Biology, Autonomous University of Barcelona

Dr. Silva Zaragüeta, Patricia

- ♦ Specialist in Obstetrics and Gynecology at La Paz University Hospital
- ♦ PhD in Medicine and Surgery from the Autonomous University of Madrid.
- ♦ Dedicated to reproductive medicine since 2012 at Hospital Universitario La Paz.



Dr. Fernández Prada, Sara

- ♦ Human Reproduction Section, La Paz University Hospital, Madrid, Spain
- ♦ Doctor specialized in Obstetrics and Gynecology
- ♦ Professional Master's Degree in Assisted Reproduction from Rey Juan Carlos University

Dr. Cabezuelo Sánchez, Vega María

- ♦ Gynecologist and Obstetrician Expert in Assisted Reproduction
- ♦ Gynecologist and Obstetrician at the Ruber International Hospital
- ♦ Researcher in Human Reproduction at the Ruber Internacional Hospital
- ♦ Collaborator in several publications and scientific communications
- ♦ Member: Spanish Fertility Society (SEF), Spanish Society of Gynecology and Obstetrics (SEGO)

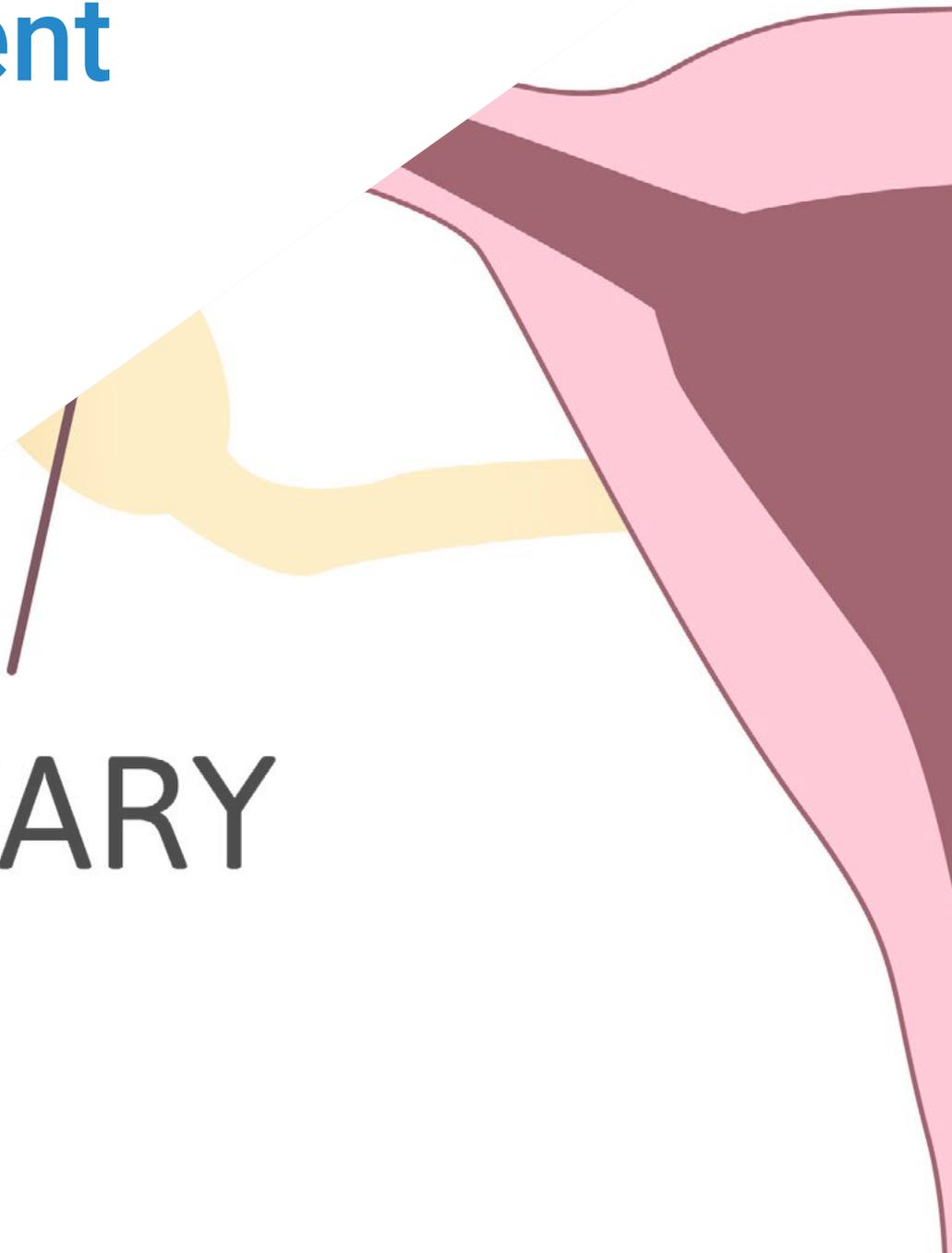
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Update your knowledge with our program in Fertility Preservation: Indications and Techniques. Cryobiology”

04

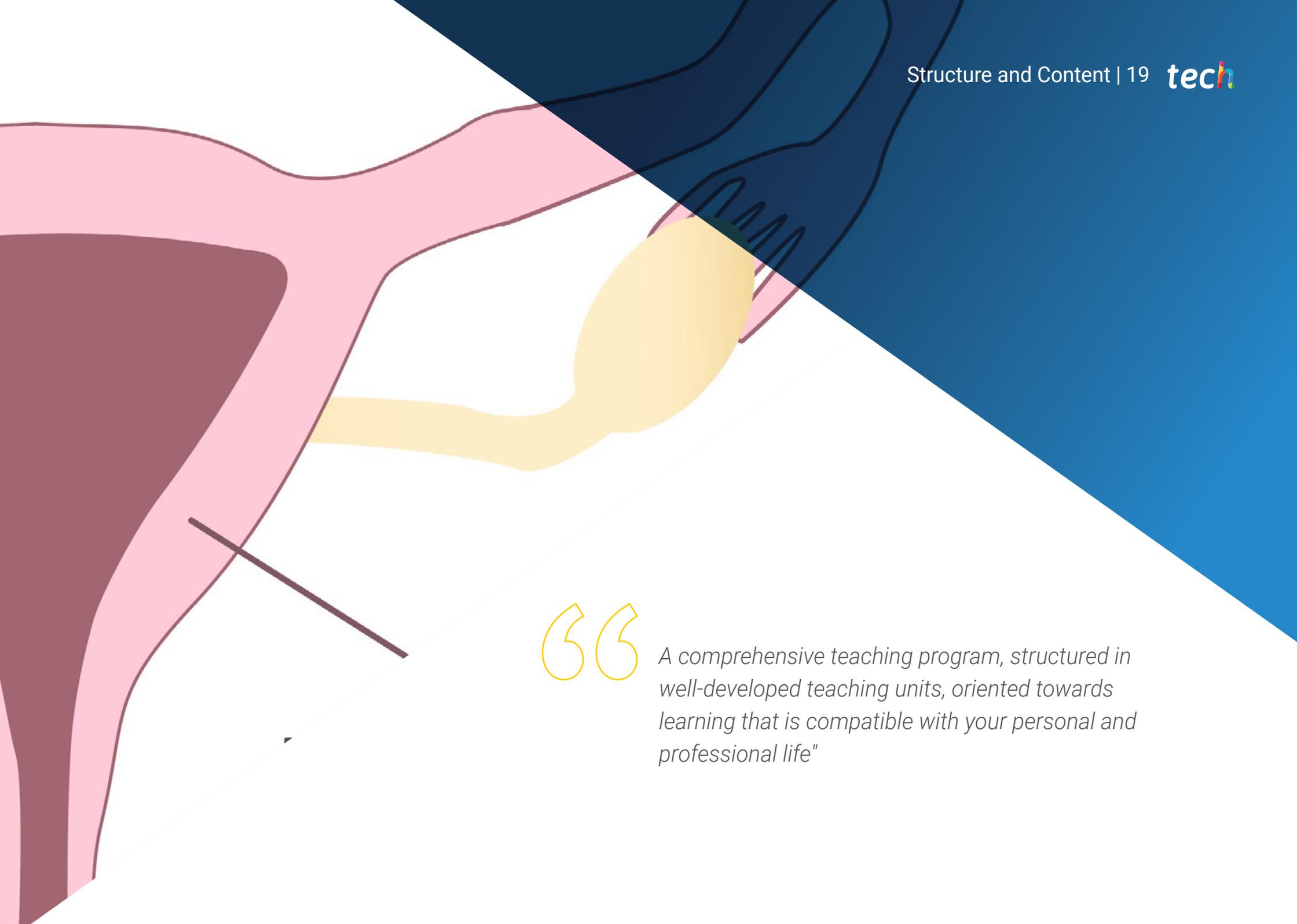
Structure and Content

The contents of this Postgraduate Diploma have been developed by the different experts on this program, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. Knowledge that will enable the student to respond in an efficient way to each and every one of the needs in this area of medicine.



OVARY

The diagram illustrates the female reproductive system in a stylized, anatomical manner. It features a yellow ovary, a pink fallopian tube, and a dark red uterus. A thin brown line points from the word 'OVARY' to the yellow structure. The background is white with a blue triangle in the bottom left corner and a pink and red abstract shape on the right side.



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A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life”

Module 1. Gamete Interaction Fertilization Embryonic Development

- 1.1. Interaction of Gametes in the Female Tract
- 1.2. Acrosomal Reaction and Hyperactivation
- 1.3. Sperm-Oocyte Interaction
- 1.4. Sperm-oocyte Fusion Oocyte Activation
- 1.5. Embryonic Development
- 1.6. Main Features in Pre-Implantation Development
- 1.7. Implantation. Embryo-Endometrium Interaction
- 1.8. Pathology of Fertilization and Embryo Classification
- 1.9. Embryo Culture In Vitro Embryo Culture Systems Culture Media, Environmental Conditions and Supplements. *One Step* and Sequential Cultures Renewal of Culture Media and Needs of the Embryo
- 1.10. In Vitro Embryonic Development Evaluation: Morphology and Morphokinetics
Classical Embryonic Morphology Time-lapse Systems Embryonic Morphokinetics
Embryonic Classification

Module 2. Gamete and Embryo Cryopreservation

- 2.1. Cryobiology Cryobiological Principles and Cryoprotective Agents Cryopreservation Systems Factors Affecting the Freezing Process Additives and Application of Cryobiology
- 2.2. The Sperm Cell Structure and Functionality Physicochemical Processes that Induce Freezing in the Spermatozoon Factors Determining Sperm Fertilization and Viability after Thawing
- 2.3. Cryopreservation of Semen Features. Regulations
- 2.4. The Oocyte Characteristics and Conditioning Factors in Cryopreservation Importance and Method of Selection Ethical and Legal Aspects. BORRAR
- 2.5. Cryopreservation in Human Embryos Importance and Method of Selection Ethical and Legal Aspects. BORRAR
- 2.6. Cryopreservation of Ovarian Tissue Laboratory Technique
- 2.7. Factors Affecting Performance in a Cryopreservation Program
- 2.8. How to Manage and Organize a Biobank and its Safety?



Module 3. Fertility Preservation

- 3.1. Fertility Preservation Cancer Epidemiology Age and Reproduction
- 3.2. Fertility Preservation for Non-Medical Reasons
- 3.3. Fertility Preservation for Oncologic Reasons
- 3.4. Fertility Preservation for Non-Oncologic Medical Reasons
- 3.5. Oocyte Vitrification. Technique and Results
- 3.6. Ovarian Cortex Cryopreservation
- 3.7. Cryopreservation of Semen
- 3.8. Vitro Maturation of Oocytes
- 3.9. Other Methods of Fertility Preservation: Conservation Surgery in Gynecologic Cancer Ovarian Transposition
- 3.10. Treatment with GnRH Analogues Prior to Gonadotoxic Treatments



A unique, key, and decisive educational experience to boost your professional development”

05

Methodology

This academic program offers students a different way of learning. Our methodology follows a cyclical learning process: **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 sustainable 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 assess 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

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

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 prepared with unprecedented success in all clinical specialties regardless of surgical load. Our educational 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 adapted in 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 assess and re-assess 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

This Postgraduate Diploma in Fertility Preservation: Indications and Techniques. Cryobiology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Fertility Preservation: Indications and Techniques. Cryobiology** contains the most complete and up-to-date scientific on the market.

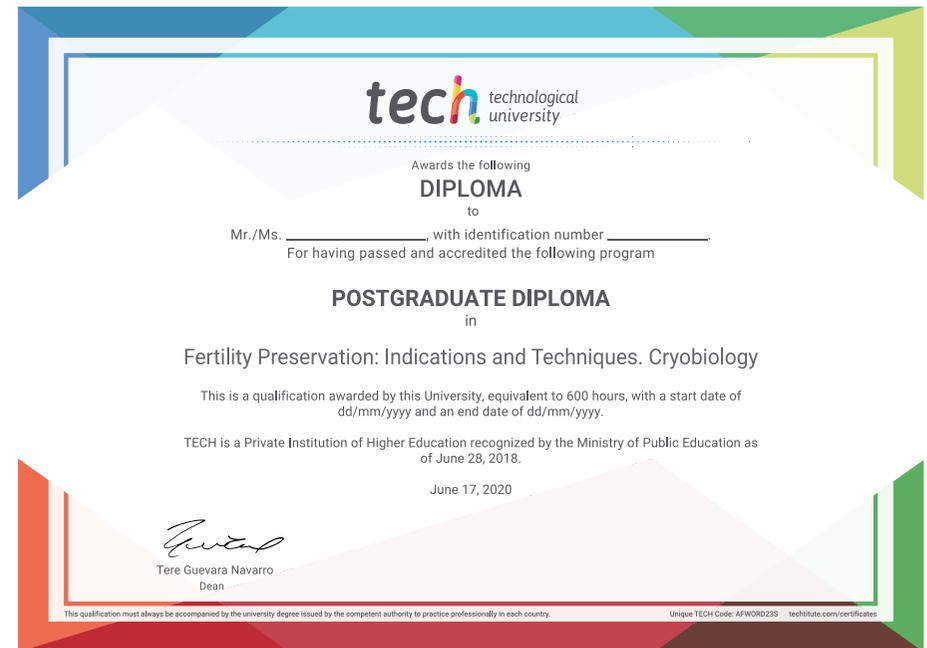
After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Fertility Preservation: Indications and Techniques. Cryobiology**

Official No. of Hours: **600 h.**

Endorsed by: Spanish Fertility Society



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

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
online treatment
development language
virtual classroom

tech technological
university

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