

# Postgraduate Certificate

## Sperm Extraction Methods and Study of Fertility in Males





## Postgraduate Certificate Sperm Extraction Methods and Study of Fertility in Males

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/pk/veterinary-medicine/postgraduate-certificate/sperm-extraction-methods-study-fertility-males](http://www.techtute.com/pk/veterinary-medicine/postgraduate-certificate/sperm-extraction-methods-study-fertility-males)

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# 01

# Introduction

Specialize in Sperm Extraction Methods and Study of Fertility in Males by professionals with extensive experience in the veterinary sector. A unique opportunity to train in a sector that is experiencing great demand for professionals, with this high-level program, which will allow you to achieve academic excellence from the comfort of your home, thanks to its 100% online modality.





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*This program is the best option you can find to specialize in Sperm Extraction Methods and Study of Fertility in Males and make more accurate diagnoses"*

From the earliest data on animal reproduction in Egyptian hieroglyphs, through the ancient veterinarians to the present day, humankind has always been interested in the study of animal reproduction to increase populations and obtain better yields.

Animal reproduction has evolved exponentially in recent decades and its current development means that technologies implemented a few years ago are now obsolete. Technique, science and human genius combine and bring, as a consequence, results identical to natural reproduction.

The objective of this program focuses on the mastery and control of all physiological, pathological and biotechnological aspects that affect the reproductive organ function of domestic animals. The species studied in this Postgraduate Certificate are: bovids, equidae, swine, sheep, goats and canids; a selection made based on the importance and development of assisted reproduction at present.

This Postgraduate Certificate has been developed to expand upon the current knowledge of the specialization in the different techniques of Sperm Extraction Methods and Study of Fertility in Males.

The group of professors teaching the Postgraduate Certificate is made up of specialists in animal reproduction with a work history of more than 30 years of experience, not only in the field of teaching, but also with practical activity, research and directly in livestock farms and animal reproduction centers. In addition, the teaching team is actively developing the latest techniques in assisted reproduction biotechnologies, making the genetic material of different species of international zootechnical interest available to the market.

The specialization will be based on the theoretical and scientific aspects, combining them with the practical and applicative professionalism of each of the subjects in the current work. Continuous training after completing undergraduate studies is sometimes complicated and difficult to combine with work and family activities, so with this Postgraduate Certificate, TECH gives the possibility to continue specializing online with a large amount of practical audiovisual support that will allow the student to advance in reproductive techniques in their work environment.

This **Postgraduate Certificate in Sperm Extraction Methods and Study of Fertility in Males** contains the most complete and up-to-date educational program on the market.

The most important features of the program include:

- ♦ The development of case studies presented by experts in Sperm Extraction Methods and Study of Fertility in Males
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ♦ Latest development in Sperm Extraction Methods and Study of Fertility in Males
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in Sperm Extraction Methods and Study of Fertility in Males
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Do not miss the opportunity to take this Postgraduate Certificate in Sperm Extraction Methods and Study of Fertility in Males. It's the perfect opportunity to advance your career"*

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*This Postgraduate Certificate is the best investment you can make when choosing a refresher program to update your existing knowledge of Sperm Extraction Methods and Study of Fertility in Males"*

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned experts in Sperm Extraction Methods and Study of Fertility in Males with extensive experience.

*This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.*

*This 100% online program will allow you to balance your studies with your professional life while increasing your knowledge in this field.*



# 02 Objectives

The program in Sperm Extraction Methods and Study of Fertility in Males is oriented to facilitate the performance of the veterinary professional with the latest advances and most innovative treatments in the sector.







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*This is the best option to learn about the latest advances in Sperm Extraction Methods and Study of Fertility in Males”*



## General Objectives

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- ♦ Analyze the whole mechanism of hormonal regulation of reproductive activity in the male
- ♦ Examine the anatomy of the accessory glands and their functions in each species of domestic mammals
- ♦ Determine the different ejaculates of domestic mammals
- ♦ Examine all reproductive pathologies and sexually transmitted diseases
- ♦ Define controls and sanitary regulations within the national and international legal framework
- ♦ Establish working protocols for sperm extraction, evaluation, processing and cryopreservation
- ♦ Specify practical methods for determining stallion fertility in clinics and farms (spermiograms)



*A path to achieve training and professional growth that will propel you towards a greater level of competitiveness in the employment market"*





## Specific Objectives

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### Module 1. Male Reproduction

- ♦ Examine the hormonal changes generated during puberty in the male
- ♦ Define the variations produced in male fertility by circadian rhythms
- ♦ Establish the conditions and activity of enzymes involved in testicular function at their specific receptors
- ♦ Evaluate the activity of antihormones
- ♦ Specify the morphological, physiological and maturation mechanisms of spermatozoa
- ♦ Fundamentals of medical nomenclature in sperm assessment
- ♦ Analyze the anatomical and physical action of flagellar sperm movement
- ♦ Compile protocols for diagnosis and treatment of venereal diseases

### Module 2. Reproductive Biotechnologies in Males

- ♦ Develop national, European and international sanitary requirements for the trade of germplasmic material
- ♦ Present the methods of macroscopic, microscopic and seminal quality assessment
- ♦ Evaluate the compositions and functionality of the different diluents, as well as the methodology for the calculation of seminal doses
- ♦ Examine the critical points in the processing, maintenance and cryopreservation of spermatozoa
- ♦ Establish quality management systems in semen freezing centers
- ♦ Compile the design of a stallion assessment system
- ♦ Identify all genetic diseases transmissible by spermatozoa
- ♦ Propose the creation of germplasm banks for the conservation of animal genetic resources

03

# Course Management

The program's teaching staff includes leading experts in Sperm Extraction Methods and Study of Fertility in Males, who contribute their vast work experience to this academic program. They are world-renowned doctors from different countries with proven theoretical and practical professional experience.



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*Our teaching team, experts in Sperm Extraction Methods and Male Fertility Study, will help you to achieve success in your profession"*

## Management



### Dr. Gomez Peinado, Antonio

- Coordinator of Obstetrics and Reproduction at Alfonso X El Sabio University, Faculty of Veterinary Medicine
- Degree in Veterinary Medicine
- Doctorate in Alfonso X El Sabio University Faculty of Veterinary Medicine - Professor of Animal Production



### Dr. Gómez Rodríguez, Elisa

- Professor of Veterinary Medicine at the Alfonso X El Sabio University
- Work development of assisted reproduction techniques at the " Spanish Institute of Animal Genetics and Reproduction" (IEGRA) in Talavera de la Reina, Toledo
- Degree in Veterinary Medicine, Complutense University Madrid
- Postgraduate course "Assisted Reproduction in Cattle Taught by IEGRA, UAX and HUMECO, Talavera de la Reina
- Course on "Bovine Reproductive Ultrasound" Taught by Dr. Giovanni Gnemmi (HUMECO), Talavera de la Reina



## Professors

### Mr. Pinto González, Agustín

- ◆ Veterinarian of the Spanish Institute of Animal Genetics and Reproduction
- ◆ Sani Lidia's Veterinarian
- ◆ Degree in Veterinary Medicine
- ◆ Specialization in Animal Reproduction at IEGRA
- ◆ IEGRA's Diploma in Artificial Insemination in Cattle

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*Update your knowledge through the program in Sperm Extraction Methods and Study of Fertility in Males”*

# 04

# Structure and Content

The structure of the contents has been designed by the best professionals in the field of Sperm Extraction Methods and Study of Fertility in Males, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied and diagnosed, and with extensive knowledge of new technologies applied to veterinary medicine.





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*This Postgraduate Certificate in Sperm Extraction Methods and Study of Fertility in Males contains the most complete and up-to-date scientific program on the market”*

## Module 1. Male Reproduction

- 1.1. Regulation of Gonadal Activities
  - 1.1.1. Regulation of FSH Synthesis and Secretion in Males
  - 1.1.2. Regulation of LH Synthesis and Secretion in Males
  - 1.1.3. Pulsatile Release of GnRH and Its Control
  - 1.1.4. Puberty and Testicular Development
  - 1.1.5. Circadian Rhythms and Their Interaction in Male Fertility
- 1.2. Testicular Steroidogenic Function
  - 1.2.1. Steroidogenesis in Males
  - 1.2.2. Enzymes and Genomic Regulation of Testicular Function
  - 1.2.3. Steroid Hormone Receptors Involved in Male Reproduction
  - 1.2.4. Receptors and Their Nuclear Action
  - 1.2.5. Antihormones
- 1.3. Accessory Glands
  - 1.3.1. Ampullae of Henle in Different Species of Domestic Mammals
  - 1.3.2. Seminal Vesicles in the Different Species of Domestic Mammals
  - 1.3.3. Prostate in Different Species of Domestic Mammals
  - 1.3.4. Bulbourethral Glands in Different Species of Domestic Mammals
- 1.4. Spermatozoa Biology
  - 1.4.1. Sperm Morphology
  - 1.4.2. Comparison of Spermatozoa in Domestic Animals
  - 1.4.3. Sperm Physiology
  - 1.4.4. Sperm Maturation
  - 1.4.5. Study of the Spermatozoa by Electron Microscopy
- 1.5. Ejaculates in the Different Species of Domestic Mammals
  - 1.5.1. Ejaculate Composition
  - 1.5.2. Variation in Ejaculate Composition among Domestic Mammal Species
  - 1.5.3. Medical Nomenclature in Sperm Assessment
  - 1.5.4. Alteration in Ejaculates as a Function of Nutritional Systems
- 1.6. Control of Spermatogenesis
  - 1.6.1. Endocrine Control of Spermatogenesis
  - 1.6.2. Initiation of Spermatogenesis in the Young Male
  - 1.6.3. Duration of Spermatogenesis in Mammals
  - 1.6.4. Sperm Chromosomal Abnormalities and the Consequences on Reproduction
- 1.7. Study of Sperm and Flagellar Movement
  - 1.7.1. Functional Anatomy of the Flagellum
  - 1.7.2. Sperm Motility
  - 1.7.3. Variations in Sperm Motility
  - 1.7.4. Sperm Transport Changes in Sperm Motility During Transport
- 1.8. Congenital Testicular Malformations
  - 1.8.1. Chromosomal abnormalities
  - 1.8.2. Genetic abnormalities
  - 1.8.3. Embryological Diagnosis of Genetic Abnormalities at the Testicular Level in Mammals
- 1.9. Reproductive Pathologies in Males
  - 1.9.1. Testicular Torsion
  - 1.9.2. Testicular Neoplasms.
  - 1.9.3. Abnormalities of the Vas Deferens and Accessory Glands
  - 1.9.4. Abnormalities of the Penis and Foreskin
  - 1.9.5. Orchitis
  - 1.9.6. Seminal Vesiculitis
  - 1.9.7. Epididymitis
- 1.10. Venereal Diseases in Mammals
  - 1.10.1. Sexually Transmitted Bacterial Diseases in Females and Males
  - 1.10.2. Sexually Transmitted Viral Diseases in Females and Males
  - 1.10.3. Sexually Transmitted Parasitic Diseases in Females and Males
  - 1.10.4. Transmission, Prevention and Control Mechanisms

**Module 2. Reproductive Biotechnologies in Males**

- 2.1. Control and Sanitary Regulations for the Selection of Donors Venereal Diseases
  - 2.1.1. Introduction
  - 2.1.2. Animal Health Risks and Their Impact on International Trade
  - 2.1.3. Legal and Institutional Framework of Global Agricultural Trade
  - 2.1.4. National, European and International Sanitary Requirements for the Trade of Germplasmic Material in Different Species
- 2.2. Methods of Semen Collection in Different Species of Domestic Mammals
  - 2.2.1. Semen Extraction Using Artificial Vagina in Different Species of Domestic Mammals
  - 2.2.2. Extraction of Semen by Electroejaculation in Different Species of Domestic Mammals
  - 2.2.3. Postmortem Semen Collection in Different Species of Domestic Mammals
  - 2.2.4. How Does the Method of Semen Collection Affect the Quality of the Ejaculate?
- 2.3. Sperm Assessment Specific Parameters and Methods to Determine Semen Quality
  - 2.3.1. Macroscopic Assessment of the Ejaculate
  - 2.3.2. Microscopic Assessment of the Ejaculate
  - 2.3.3. Existing Methods for Semen Quality Assessment
- 2.4. Processing and Maintenance of Spermatozoa in Different Mammalian Species
  - 2.4.1. Composition and Functionality of the Diluent
  - 2.4.2. Differences in the Composition of Diluents in Different Species of Domestic Mammals
  - 2.4.3. Methodology for Calculating the Number of Seminal Doses
  - 2.4.4. Straw Packaging and Printing Criteria
  - 2.4.5. Critical Points During Processing and Maintenance of Spermatozoa
- 2.5. Sperm Cryopreservation
  - 2.5.1. Introduction
  - 2.5.2. Types of Cryoprotectants Used in Sperm Cryopreservation and Their Function
  - 2.5.3. Sperm Cryopreservation Methods
  - 2.5.4. Differences in Patterns of Sperm Cryopreservation in Different Species of Domestic Mammals
- 2.6. Quality Management System in Semen Freezing Centers
  - 2.6.1. Pre-Marketing Quality Management System for Seminal Doses
  - 2.6.2. Internal Data Management System for the Control of Seminal Dose in a Reproductive Center
  - 2.6.3. Quality Management Systems for the Movement of Seminal Dose at the National Level
  - 2.6.4. Quality Management Systems in Sperm Freezing Centers by the Ark
- 2.7. Methods of Determining the Fertility of Stallions Individually and on Farms
  - 2.7.1. Complete Study of Physical Capabilities for Riding and Sexual Libido
  - 2.7.2. Hormonal and Health Analyses
  - 2.7.3. Evaluation of the Reproductive System of the Stallion
  - 2.7.4. Therapeutic Methods to Improve Fertility in a Stallion
- 2.8. Genetic Characteristics of Stallions (Progeny Testing) and Guidelines for Marketing of Frozen Semen Doses
  - 2.8.1. Design of an Animal Assessment System
  - 2.8.2. Assess the Genetic Performance of an Individual
  - 2.8.3. Genomic Assessment
- 2.9. Study of Genetic Diseases Transmissible by Spermatozoa
  - 2.9.1. Introduction
  - 2.9.2. Peripheral Blood Karyotype
  - 2.9.3. Study of Meiosis in Testicular Tissue
  - 2.9.4. Study of the Spermatozoon
  - 2.9.5. Genetic Analysis of the Stallion to Detect Communicable Diseases
- 2.10. Establishment of Germplasm Banks for the Conservation of Animal Genetic Resources
  - 2.10.1. Regulations for the Creation of a Germplasm Bank
  - 2.10.2. Germplasm Bank Quality Management Systems
  - 2.10.3. Importance of a Germplasm Bank

# 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 you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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, in an attempt to recreate the actual conditions in a veterinarian'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. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
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. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the 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.



*Veterinarians 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 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high socio-economic profile and an average age of 43.5 years.

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



#### Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary 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

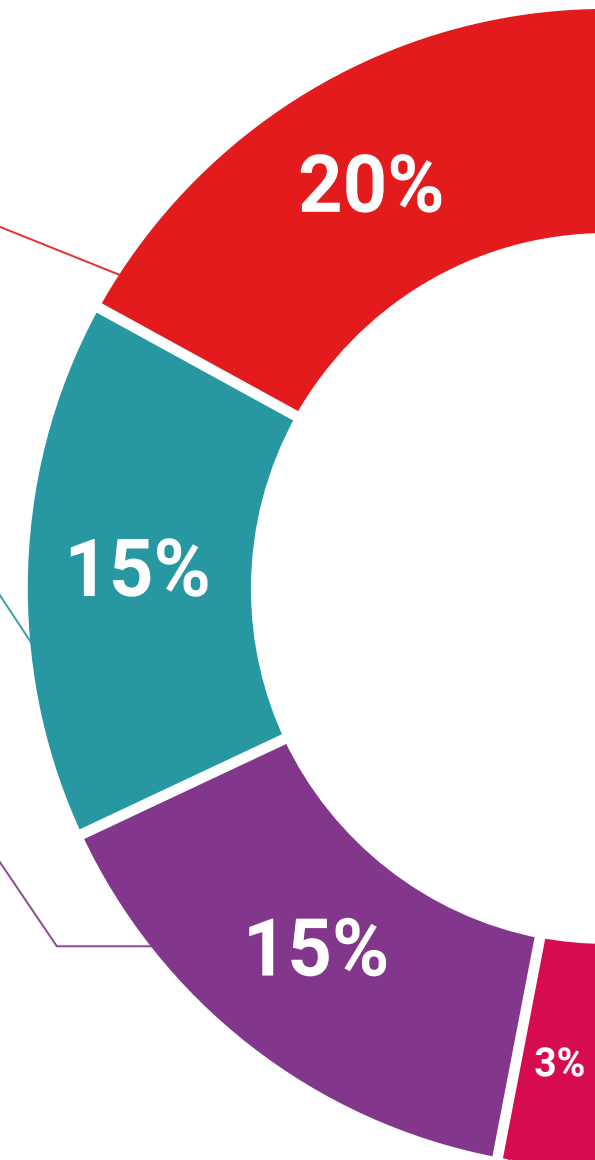
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 suggesting that observing third-party experts can be useful.

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 Sperm Extraction Methods and Study of Fertility in Males guarantees students, in addition to the most rigorous and up-to-date education, access to a qualification 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 Sperm Extraction Methods and Study of Fertility in Males** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **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 Sperm Extraction Methods and Study of Fertility in Males**

Official N° of Hours: **300 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.

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



## Postgraduate Certificate Sperm Extraction Methods and Study of Fertility in Males

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate

## Sperm Extraction Methods and Study of Fertility in Males

