

# Postgraduate Diploma Pathology in Aquaculture





## Postgraduate Diploma Pathology in Aquaculture

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: <https://www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-pathology-aquaculture>

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 24*

06

Certificate

---

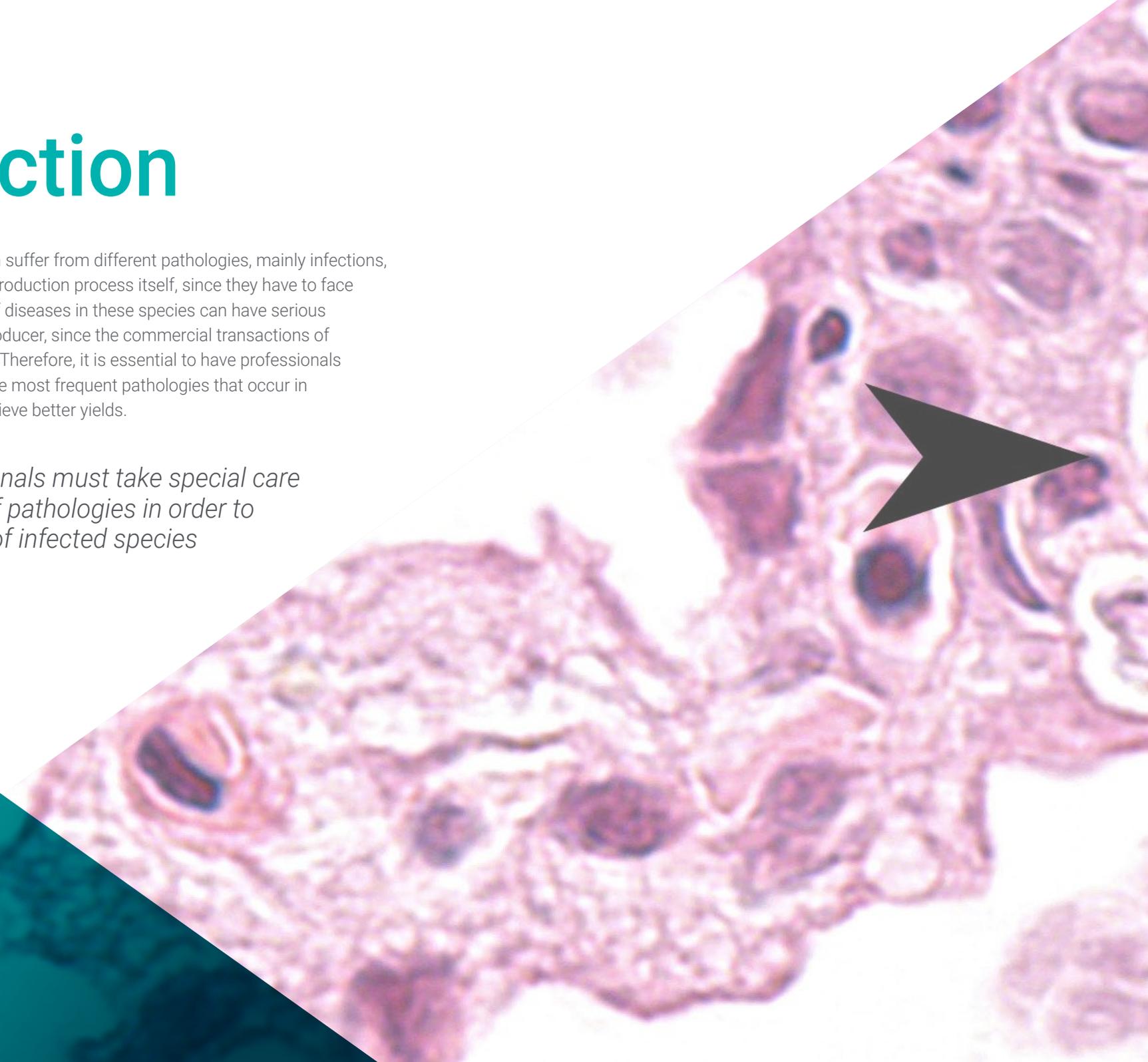
*p. 32*

# 01

# Introduction

Aquaculture production species can suffer from different pathologies, mainly infections, but they are also vulnerable to the production process itself, since they have to face stressful stimuli. The appearance of diseases in these species can have serious economic consequences for the producer, since the commercial transactions of aquaculture companies are limited. Therefore, it is essential to have professionals capable of detecting and treating the most frequent pathologies that occur in aquaculture species, in order to achieve better yields.

*Aquaculture professionals must take special care in the management of pathologies in order to achieve the recovery of infected species*





“

*Global population growth requires new advances in breeding and farming systems to ensure an adequate food supply"*

Aquaculture is an activity of great relevance, since it has become one of the most economically important activities in the field of food production and for the breeding of live organisms for repopulation and for the cultivation of species for ornamental use, among others.

The cultivation of aquatic organisms on a large scale is relatively recent, but this is not the case with the practice of this activity on a small scale, since it has existed for some time in some countries. In addition, there are different models of aquaculture production that the professional in this field should know at the time of specialization, besides being important to have a deep knowledge of the physiological functioning of the different systems and devices that make up the anatomy of aquaculture species, not only to make the right decisions during the handling and management of an aquaculture facility, but also in the correct design of the production facilities.

In this Postgraduate Diploma, the professional will have in-depth knowledge of the main pathologies related to aquaculture, an absolutely current and extremely important subject, since pathological alterations in aquaculture production can become a real headache for those responsible for it. Thus, correct prevention to avoid the arrival or action of pathogens is essential in any production model. This implies maintaining suitable hygienic, food and environmental conditions, since most pathogens benefit from when the animals are under stress.

The most common pathologies in aquaculture include infectious agents of the most common groups, such as bacterial, viral, fungal and parasitic pathogens. Not all species are affected in the same way by the same pathogens, so specialized knowledge about the main causes of diseases in these species is necessary, a matter of extreme utility in health prevention.

There is also a range of disorders caused by errors in feeding, either by inadequate dosage of the amount of feed or by failures in the formulation of the feed, which gives rise to a series of excesses or deficits of some essential components that can cause great productive losses, as well as other types of conditions such as neoplasms, disorders due to stress or the action of irritants, for example.

This Postgraduate Diploma provides students with specialized tools and skills to successfully develop their professional activity in the wide aquaculture environment, works on key competencies such as knowledge of the reality and daily practice of the professional, and it further promotes responsibility in the monitoring and supervision of their work, as well as communication skills through essential teamwork. In addition, as it is an online Postgraduate Diploma, the student is not constrained by fixed timetables or the need to move to another physical location, but can access the contents at any time of the day, balancing his or her work or personal life with their academic life.

This **Postgraduate Diploma in Pathology in Aquaculture** contains the most complete and updated educational program on the market. The most important features of the program include:

- ♦ Practical cases studies are presented by experts in Aquaculture.
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ News regarding pathologies in aquaculture.
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning.
- ♦ Special emphasis is placed on innovative methodologies in the treatment of pathologies in aquaculture.
- ♦ 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.



*Immerse yourself in this high-quality Educational training, which will allow you to face the future challenges in Pathology Aquaculture"*

“

*This Postgraduate Diploma is the best investment you can make in selecting a refresher program to bring your knowledge in Aquaculture Pathology up to date"*

Its teaching staff includes professionals belonging to the veterinary field, who contribute their expertise to this training, as well as renowned specialists from leading societies and prestigious universities.

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

This program is designed around Problem Based Learning, whereby the specialist must try to solve the different professional practice situations that arise during the academic year. To this end, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in aquaculture pathology.

*This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning*

*This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work while increasing your knowledge in this field*



# 02 Objectives

The Postgraduate Diploma in Pathology in Aquaculture is designed to facilitate the performance of the veterinary professional with the latest advances and the most innovative treatments in the sector.





“

*Our goal is to achieve academic excellence and to help you achieve professional success as well”*



## General Objectives

- ◆ Examine the different Types of Aquaculture.
- ◆ Generate specialized knowledge on the criteria and parameters that determine a suitable environment in which to implement an aquaculture culture.
- ◆ Specify which measures are necessary to maintain reliable crops.
- ◆ Generate specialized knowledge on the fundamentals of Genetic Improvement in Aquaculture.
- ◆ To generate specialized knowledge of the different Physiological Processes that occur in Aquaculture Species
- ◆ Determine the different processes of exchange with the environment of animal and plant species used in aquaculture.
- ◆ To examine the Causes of Alterations of Vital Physiological Elements
- ◆ Determine the main causes of stress and implement the most effective solutions for its elimination.
- ◆ Improve the Hygienic-sanitary Planning of an Aquaculture Facility
- ◆ Increase the capacity to anticipate possible Pathological Outbreaks
- ◆ Generate specialized knowledge on the main Pathogenic Agents
- ◆ Develop advanced knowledge for the Diagnosis and Treatment of Diseases





## Specific Objectives

---

- ♦ Analyze the History and Evolution of Aquaculture Production for a better understanding of its current situation.
- ♦ Examine the different Criteria that determine Water Quality in Aquaculture.
- ♦ Determine the Parameters that determine Water Quality in Aquaculture.
- ♦ Analyze the different types of Crops that exist and the most frequent Production Systems in them.
- ♦ Examine the different Biosafety measures existing within the different types of Crop.
- ♦ Generate specialized knowledge on the different Genetic Resources that can be used to achieve Crop Improvement.
- ♦ Establish the Processes of Handling and Management of Waste in Aquaculture.
- ♦ Develop Specialized Knowledge on ways to Control, Manage, and Minimize the Pollution Produced by this Activity.
- ♦ Determine the Physiological Mechanism of Action of Sensory Organs.
- ♦ Generate specialized Knowledge on the relationship between Oxygen Uptake Processes and the Mechanisms of the Cardiovascular System.
- ♦ Delve into the Metabolic Processes and their Results.
- ♦ Determine the Importance of Osmotic and Ionic Balances.
- ♦ Establish the importance of the Endocrine System in the control of other Physiological Functions.
- ♦ Analyze the causes of Stress and Methods for dealing with it.
- ♦ Better define the Physiological Processes in Algae.
- ♦ Examine the Symptoms Specific to each Pathogenic Agent.
- ♦ Analyze the most Frequent Infectious Diseases in the most Common Species.
- ♦ Develop the Functioning of the Immune System in Susceptible Production Species.
- ♦ Gain Specialized Knowledge to carry out specific Treatment for the Different Pathologies.
- ♦ Efficiently Correct Nutritional Deficits in Aquaculture Farms.
- ♦ Learn about Better Methods to Solve Non-infectious Pathologies.
- ♦ Determine a Biosecurity Protocol to Reduce the Risk of Disease Occurrence.



*Join one of the largest online universities in the world"*

04

# Course Management

The program's teaching staff includes leading experts in Aquaculture who contribute their vast work experience to this training program. They are World-renowned Professionals from different Countries with proven Theoretical and Practical Professional Experience.



“

*We have the best Teaching Team in the field of Aquaculture, with years of experience and who are determined to transmit all their knowledge about this Sector"*

## Management



### Mr. Gracia Rodríguez, José Joaquín

- ◆ Degree in Veterinary Medicine from the University of Murcia.
- ◆ Diploma in Aquaculture Specialization. Polytechnic University of Valencia
- ◆ Advanced Ichthyopathology Course
- ◆ International Congress on Sustainable Aquaculture
- ◆ Certificate in Pedagogical Aptitude University of Extremadura
- ◆ Attendance at the AVEPA Continuing Education Conference
- ◆ Teacher in Higher Vocational Training Degrees in the Sanitary Branch
- ◆ Training in Biosecurity and Pathology in the Ornamental Aquaculture Sector
- ◆ Speaker at National Congresses and Courses on Ornamental Aquaculture
- ◆ Training Courses for Livestock Farmers on Safety and Regulations in the Transport of Animals.
- ◆ Food Handler Courses for Companies and Individuals.
- ◆ Consultant in Ichthyopathology for several companies in the Aquaculture Sector
- ◆ Technical Director in the Ornamental Aquaculture Industry
- ◆ Coordination of Projects in Maintenance of Wild Species and Water Quality
- ◆ Projects in Natural Parks for the Control of Allochthonous Ichthyofauna
- ◆ Projects for the Recovery of Native Crayfish
- ◆ Carrying out Wildlife Species Censuses
- ◆ Coordination of livestock Sanitation Campaigns in Castilla-La Mancha
- ◆ Veterinarian in a Breeding and Genetic Improvement Company in the Rabbit Breeding Sector



### Ms. Herrero Iglesias, Alicia Cristina

- ♦ Degree in Veterinary Medicine from the University of Extremadura.
- ♦ Master's Degree in Secondary Education, International University of La Rioja
- ♦ Course "Animal Welfare in Livestock Production" organized by the Official College of Veterinarians of Madrid, in collaboration with the Faculty of Veterinary Medicine UCM and the Ministry of Environment and Land Management of the Community of Madrid.
- ♦ Occupational Trainer, given by the INESEM Postgraduate Training Center.
- ♦ Course "Trainer of Trainers" given by the Antonio de Nebrija University.
- ♦ Teacher in the Degree in Veterinary Medicine, University of Alfonso X el Sabio (Madrid)
- ♦ Since February 2012 she has been Teaching "Ethnology and Veterinary Business Management" and "Animal Production"
- ♦ From the Academic Year 2016-2017 to the present, I have been teaching Hematological Analysis Techniques and Immunological Diagnostic Techniques for the 2nd year of the Formative Cycle of Higher Degree of Clinical and Biomedical Laboratory in Opesa (Madrid)
- ♦ Secondary School Teacher Cristóbal Colón School (Talavera de la Reina) Academic Year 18/19
- ♦ Veterinary Trainer in the Alonso Herrero HACCP Company for the Training of Food Handlers
- ♦ Teacher of the Course of Veterinary Technical Assistant, in Grupo INN, giving Classes during the course 18/19 (Talavera de la Reina)
- ♦ Her Professional Career began with Field Work in the Field of Large Animal Production.
- ♦ After working in Animal Health and Sanitary Inspection, she began to focus on the Field of Teaching.
- ♦ At present, she combines her Teaching Work at the University with Higher Technical Classes and Field Activities within the Veterinary Field.
- ♦ During her Professional Career, she has taken a large number of ongoing Training and Specialization Courses.
- ♦ Internships in the Jesús Usón Center for Minimally Invasive Surgery (CCMI) in Cáceres, Spain
- ♦ She was also a Student Intern at the Department of Medicine of the Faculty of Veterinary Medicine of the UEX.

## Professors

### Mr. Gracia Rodríguez, José Joaquín

- ◆ Degree in Veterinary Medicine from the University of Murcia.
- ◆ Diploma in Aquaculture Specialization. Polytechnic University of Valencia
- ◆ Advanced Ichthyopathology Course
- ◆ International Congress on Sustainable Aquaculture
- ◆ Certificate in Pedagogical Aptitude University of Extremadura.
- ◆ Attendance at the AVEPA Continuing Education Conference
- ◆ Teacher in Higher Vocational Training Degrees in the Sanitary Branch
- ◆ Training in Biosecurity and Pathology in the Ornamental Aquaculture Sector
- ◆ Speaker at National Congresses and Courses on Ornamental Aquaculture
- ◆ Training Courses for Livestock Farmers on Safety and Regulations in the Transport of Animals.
- ◆ Food Handling Courses for companies and individuals.
- ◆ Consultant in Ichthyopathology for several companies in the Aquaculture Sector
- ◆ Technical Director in the Ornamental Aquaculture Industry.
- ◆ Coordination of Projects in Maintenance of Wild Species and Water Quality
- ◆ Projects in Natural Parks for the Control of Allochthonous Ichthyofauna
- ◆ Projects for the Recovery of Native Crayfish
- ◆ Carrying out Wildlife Species Censuses
- ◆ Coordination of livestock Sanitation Campaigns in Castilla-La Mancha
- ◆ Veterinarian in a Breeding and Genetic Improvement Company in the Rabbit Breeding Sector

### Ms. Herrero Iglesias, Alicia Cristina

- ◆ Degree in Veterinary Medicine from the University of Extremadura.
- ◆ Master's Degree in Secondary Education, International University of La Rioja
- ◆ Course "Animal Welfare in Livestock Production" organized by the Official College of Veterinarians of Madrid, in collaboration with the Faculty of Veterinary Medicine UCM and the Ministry of Environment and Land Management of the Community of Madrid.
- ◆ Occupational Trainer, given by the INESEM Postgraduate Training Center.
- ◆ Course "Trainer of Trainers" given by the Antonio de Nebrija University.
- ◆ Teacher in the Degree in Veterinary Medicine, University of Alfonso X el Sabio (Madrid)
- ◆ Since February 2012 she has been Teaching "Ethnology and Veterinary Business Management" and "Animal Production"
- ◆ From the Academic Year 2016-2017 to the present, teaching Hematological Analysis Techniques and Immunological Diagnostic Techniques for the 2nd year of the Formative Cycle of Higher Degree of Clinical and Biomedical Laboratory in Opesa (Madrid)
- ◆ Secondary School Teacher Cristóbal Colón School (Talavera de la Reina) Academic Year 18/19
- ◆ Veterinary Trainer in the Alonso Herrero HACCP Company for the Training of Food Handlers
- ◆ Teacher of the Course of Veterinary Technical Assistant, in Grupo INN, giving Classes during the course 18/19 (Talavera de la Reina)
- ◆ Her Professional Career began with Field Work in the Field of Large Animal Production.
- ◆ After working in Animal Health and Sanitary Inspection, she began to focus on the Field of Teaching.
- ◆ At present, she combines her Teaching Work at the University with Higher Technical Classes and Field Activities within the Veterinary Field.
- ◆ During her Professional Career, she has taken a large number of ongoing Training and Specialization Courses.
- ◆ Internships in the Jesús Usón Center for Minimally Invasive Surgery (CCMI) in Cáceres, Spain
- ◆ She was also a Student Intern at the Department of Medicine of the Faculty of Veterinary Medicine of the UEX.



**Ms. Játiva Miralles, Lucía**

- ◆ Degree in Veterinary Medicine from the University of Murcia.
- ◆ Certificate in Pedagogical Aptitude University of Extremadura.
- ◆ Attendance at the AVEPA Continuing Education Conference
- ◆ II AMURVAC Annual Meeting: Ophthalmology, Exotics, and Neurology
- ◆ III Conference on Veterinary Emergencies: Ophthalmologic, Hematologic, and Oncologic Emergencies. Emergencies in Exotic Animals
- ◆ VII VEDEMA Course: Marine Mammals "Clinic and Biology"
- ◆ Practical Course on Parasitology of Wild Ruminants in Captivity. CSIC. Experimental Station of Arid Zones of Almeria.
- ◆ Teacher in Secondary Education for the Education Council of the Community of Madrid. Since 2017
- ◆ Field Technician with Livestock Sanitation Tasks for the Company Vaersa, in the Province of Alicante. 2015



*The best teachers are at the best university to help you advance your career"*

05

# Structure and Content

The structure of the content has been designed by the best Professionals in the Aquaculture Sector, 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.



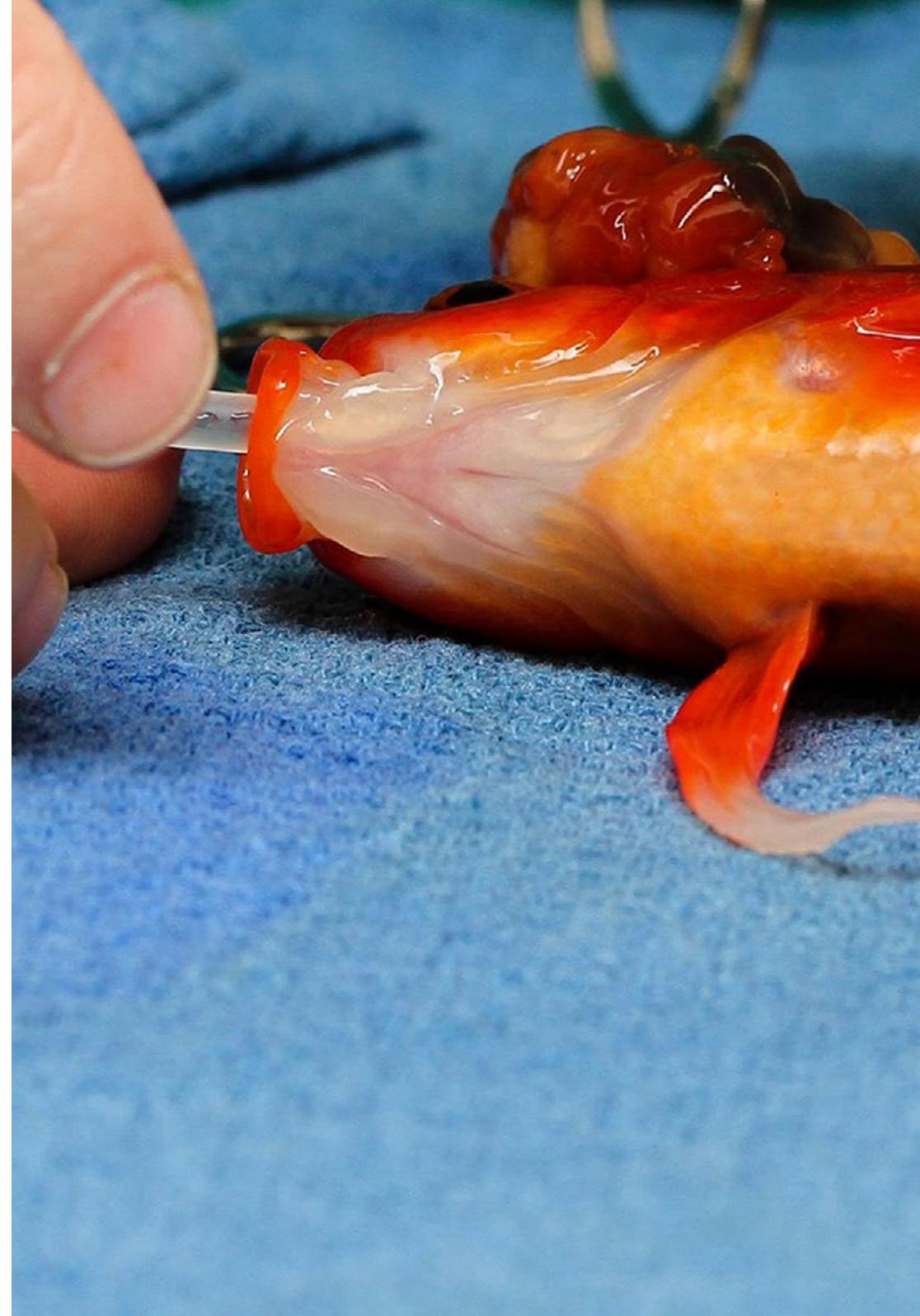


“

*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too”*

## Module 1. Aquaculture Production

- 1.1. Aquaculture
  - 1.1.1. History.
  - 1.1.2. Types of Aquaculture according to the Organism to be Cultured.
  - 1.1.3. Types of Aquaculture according to Location.
  - 1.1.4. Aquaculture in Micro-reservoirs.
  - 1.1.5. Recirculation Systems in Aquaculture.
- 1.2. Water Quality
  - 1.2.1. Water in Aquaculture.
  - 1.2.2. Physical Properties of Water.
  - 1.2.3. Water Quality Criteria.
  - 1.2.4. Measurements.
- 1.3. Water Quality Parameters in Aquaculture Cultures.
  - 1.3.1. Physical Parameters.
  - 1.3.2. Chemical Parameters.
  - 1.3.3. Biological Parameters.
- 1.4. Types of Aquaculture.
  - 1.4.1. Fish Farming.
  - 1.4.2. Bivalve Mollusc Culture.
  - 1.4.3. Crustacean Culture.
- 1.5. Live Food Culture.
  - 1.5.1. Importance of Live Food.
  - 1.5.2. Use of Microalgae as Live Feed.
  - 1.5.3. Rotifers as Live Food.
  - 1.5.4. Artemia as Live Food.
  - 1.5.5. Other Organisms used as Live Food.





- 1.6. Aquaponics.
  - 1.6.1. Introduction.
  - 1.6.2. Aquaponic Recirculation Systems.
  - 1.6.3. Design of Aquaponic Recirculating Aquaponics System.
  - 1.6.4. Species used in this type of System.
- 1.7. Biosecurity in Aquaculture Farms.
  - 1.7.1. Biosafety.
  - 1.7.2. Measures to reduce the Risk of Pathogen Occurrence.
  - 1.7.3. Measures to reduce the Risk of the Spread of Pathogens.
- 1.8. Prophylaxis and Vaccination in Aquaculture.
  - 1.8.1. Immunology.
  - 1.8.2. Vaccination as a Preventive Measure.
  - 1.8.3. Types of Vaccines and Administration channels in Aquaculture.
- 1.9. Handling and Waste Management in Aquaculture.
  - 1.9.1. Waste Management.
  - 1.9.2. Waste Characteristics.
  - 1.9.3. Waste Storage.
- 1.10. Aquaculture as a Source of Pollution and Pollution Prevention.
  - 1.10.1. Inland Aquaculture as a Source of Pollution.
  - 1.10.2. Marine Aquaculture as a Source of Pollution.
  - 1.10.3. Other Types of Aquaculture as a Source of Pollution.
  - 1.10.4. Prevention of Water Pollution from Inland Aquaculture Activity.
  - 1.10.5. Prevention of Water Pollution in Marine Aquaculture Activity.
  - 1.10.6. Prevention of Water Pollution in other Aquaculture Activities.

**Module 2. Advanced Physiology of Aquaculture Species. Fish, Molluscs, Crustaceans, and Algae**

- 2.1. Sensory System I.
  - 2.1.1. Vision.
  - 2.1.2. Hearing and Balance.
  - 2.1.3. Cutaneous Sensors
  - 2.1.4. Behaviour.
- 2.2. Sensory System II.
  - 2.2.1. Nociception.
  - 2.2.2. Chemoreceptors
  - 2.2.3. Special Adaptations.
- 2.3. Cardiovascular System of Aquaculture Species.
  - 2.3.1. Blood. General Characteristics and Composition.
  - 2.3.2. Cardiac Cells.
  - 2.3.3. Extrinsic and Intrinsic Control Mechanisms.
- 2.4. Metabolisms of the Species used in Aquaculture.
  - 2.4.1. Digestion and Assimilation.
  - 2.4.2. Physiological Processes in the Physiological Metabolism of Carbohydrates.
  - 2.4.3. Physiological Processes in Physiological Lipid Metabolism.
  - 2.4.4. Physiological Processes in Physiological Protein Metabolism.
  - 2.4.5. Transport of Substances at the Intestinal Level.
- 2.5. Oxygen Uptake.
  - 2.5.1. Respiratory Chemoreceptors.
  - 2.5.2. Gill Structure.
  - 2.5.3. Extrabranhial Receptors.
- 2.6. Osmotic and Ionic Balance.
  - 2.6.1. Introduction.
  - 2.6.2. Na<sup>+</sup>/Cl<sup>-</sup> Equilibrium.
  - 2.6.3. Acid-Base Balance.
  - 2.6.4. K<sup>+</sup> Secretion.
- 2.7. Stress in Aquaculture Facilities.
  - 2.7.1. Definition and Concepts.
  - 2.7.2. Consequences of Stress.
  - 2.7.3. Thermal Stress.
  - 2.7.4. Social Stress.
  - 2.7.5. Handling Stress.
- 2.8. Endocrine System.
  - 2.8.1. General Considerations.
  - 2.8.2. Pituitary and Endocrine Organs.
  - 2.8.3. Hypothalamus-Pituitary-Thyroid Axis.
  - 2.8.4. Endocrine Disruptors.
- 2.9. Physiology of the Skin and Anatomy and Physiology of the Locomotor System.
  - 2.9.1. Skin Tissue Structure.
  - 2.9.2. Bone-cartilaginous Physiology.
  - 2.9.3. Muscles:
  - 2.9.4. Physiological Aspects of Locomotion.
  - 2.9.5. Buoyancy.
- 2.10. Applied Algal Physiology.
  - 2.10.1. General Structure Types.
  - 2.10.2. Cell Morphology.
  - 2.10.3. Associated Structures.
  - 2.10.4. Internal Structure.
  - 2.10.5. Movement of Algae.
  - 2.10.6. Nutrition.
  - 2.10.7. Photoreceptor System.
  - 2.10.8. Photosynthesis.
  - 2.10.9. Interaction of Algae in Biological Cycles.

**Module 3. Pathology Most common Diseases and Disorders in Aquaculture**

- 3.1. Pathology in Aquaculture.
  - 3.1.1. Important Concepts.
  - 3.1.2. Importance of the Immune System.
  - 3.1.3. Infectious Diseases.
  - 3.1.4. Parasitic Diseases.
  - 3.1.5. Nutritional Diseases.
  - 3.1.6. Other Causes of Illness.
- 3.2. Bacterial Diseases I.
  - 3.2.1. General Symptoms Methods of Diagnosis and Treatment.
  - 3.2.2. Flavobacteria.
  - 3.2.3. Enterobacteriaceae.
  - 3.2.4. Aeromonas.
  - 3.2.5. Pseudomonas.
- 3.3. Bacterial Diseases II.
  - 3.3.1. Mycobacteria.
  - 3.3.2. Photobacteria.
  - 3.3.3. Flexibacteria.
  - 3.3.4. Chlamydia.
  - 3.3.5. Other Bacteria.
- 3.4. Fungal Diseases.
  - 3.4.1. General Symptoms Methods of Diagnosis and Treatment.
  - 3.4.2. Oomycetes.
  - 3.4.3. Chytridiomycetes.
  - 3.4.4. Zygomycetes.
  - 3.4.5. Deuteromycetes.
- 3.5. Viral Diseases I.
  - 3.5.1. Symptoms, Diagnostic Methods, and Treatment.
  - 3.5.2. Notifiable Viral Diseases (NDD).
  - 3.5.3. Epizootic Hematopoietic Necrosis.
  - 3.5.4. Infectious Hematopoietic Necrosis.
  - 3.5.5. Viral Hemorrhagic Septicemia.
  - 3.5.6. Infectious Pancreatic Necrosis.
- 3.6. Viral Diseases II.
  - 3.6.1. Infectious Salmon Anemia.
  - 3.6.2. Koi Herpes.
  - 3.6.3. Encephalopathy and Viral Retinopathy.
  - 3.6.4. Lymphocystis.
  - 3.6.5. Pancreatic and Sleeping Diseases.
  - 3.6.6. Other Viral Diseases.
- 3.7. Parasitic Diseases.
  - 3.7.1. Symptoms. Methods of Diagnosis and Treatment.
  - 3.7.2. Protists.
  - 3.7.3. Metazoans.
- 3.8. Nutritional Diseases.
  - 3.8.1. Important considerations in the relationship between Nutrition and its Pathologies.
  - 3.8.2. Causes of Starvation.
  - 3.8.3. Protein, Lipid, and Carbohydrate Deficiencies.
  - 3.8.4. Vitamin Deficiency.
  - 3.8.5. Mineral Deficiency.
  - 3.8.6. Toxins and their Effects on Food.
- 3.9. Neoplasms.
  - 3.9.1. Importance of Neoplastic Processes.
  - 3.9.2. Tumors of Epithelial Origin.
  - 3.9.3. Tumors of Mesenchymal Origin.
  - 3.9.4. Hematopoietic Tumors
  - 3.9.5. Other Tumor Processes.
- 3.10. Other Non-infectious Diseases.
  - 3.10.1. Trauma Lesions
  - 3.10.2. Heat Stress Disease.
  - 3.10.3. Social Stress Pathologies.
  - 3.10.4. Gas Bubble Disease.
  - 3.10.5. Irritants
  - 3.10.6. Physical Deformations
  - 3.10.7. Genetic Alterations.
  - 3.10.8. Diseases caused by Algae.

06

# Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: **relearning**. This Harvard University teaching system, is used in the most prestigious medical schools in the world and has been considered one of the most effective by major publications such as *The New England Journal of Medicine*.





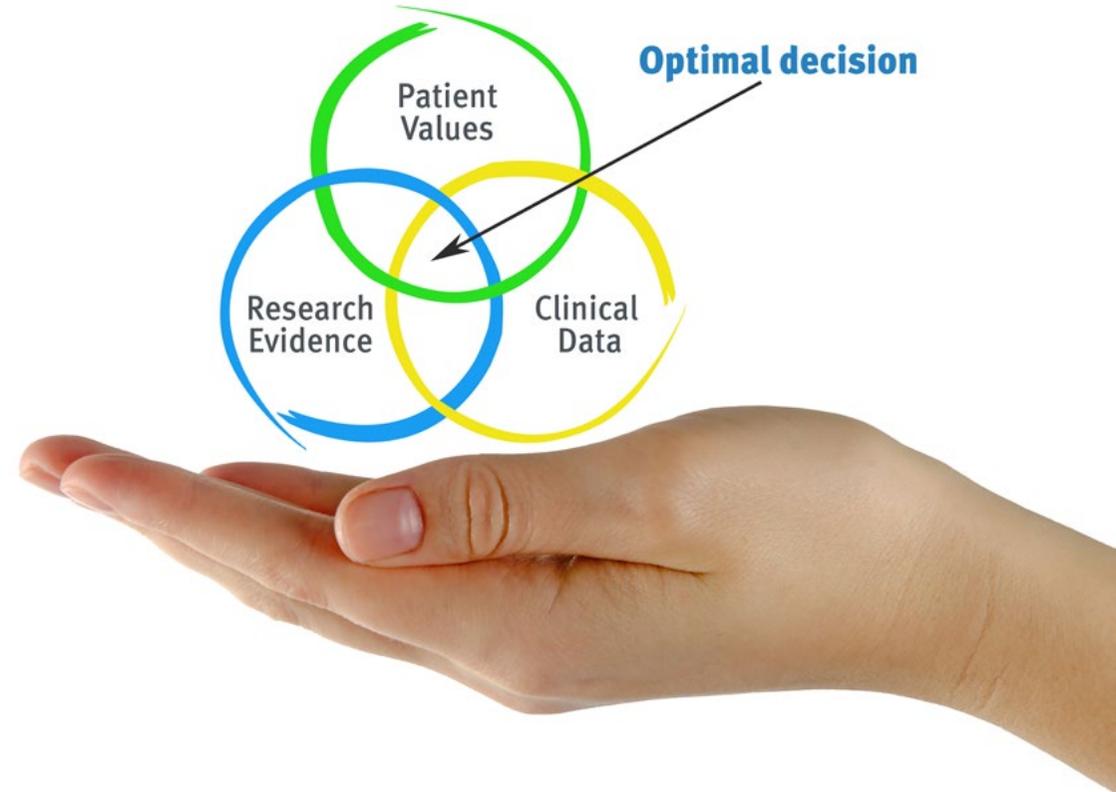
“

*Discover Re-learning, 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"*

In a given situation, what would you do? Throughout these months, the professional will face multiple simulated clinical cases based on real patients in which he/she will have to investigate, establish hypotheses and finally, resolve the situation. This method ensures specialists learn better as they accept more responsibility and get closer to the reality of their professional future.



*Re-learning 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 to success"*



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 potential or because of its uniqueness or rarity. It is essential that the case studies be based on current professional experiences which attempt to recreate the real conditions of professional practices in the veterinary.

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

field.

01

Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.

---

02

The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.

---

03

Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.

---

04

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.

---



## Re-learning Methodology



*The student will be able to learn with the advantages of access to simulated learning environments and the "Learning from an expert approach in which they learn by observation"*

*An immersive system of knowledge transmission, through participation in resolving real problems and supported by the best audiovisual technology on the educational market"*

*The Re-learning method, will help you to learn and consolidate what you have learnt in a more efficient way, as well as allowing you to achieve your training goals more quickly and with less effort*





At the forefront of world teaching, the Re-learning 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. The teaching quality, the quality of the materials, the structure of the course and the objectives achieved were rated as very positive.

*With more than 40,000 teachers trained in this methodology and a satisfaction rating of 8.0, relearning has proven to be on par with the most demanding assessment frameworks"*

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

More than 150,000 professionals have been trained with this methodology, achieving unprecedented success. All this in a highly demanding environment, with the highest standards of evaluation and monitoring.

*This training will be based, above all, on experience. A process in which you will test the knowledge you will acquire, consolidating and improving it gradually*

In this program you will have access to the best educational material, prepared with you in mind



### Study Material

All didactic contents are created by the very specialists who are going to teach the course, which is specifically designed for the course, so that the didactic content is both specific and practical.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



### Educational Techniques and Procedures on Video

We introduce you to the latest techniques, with the latest educational advances, and at the forefront of education. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



### Interactive Summaries

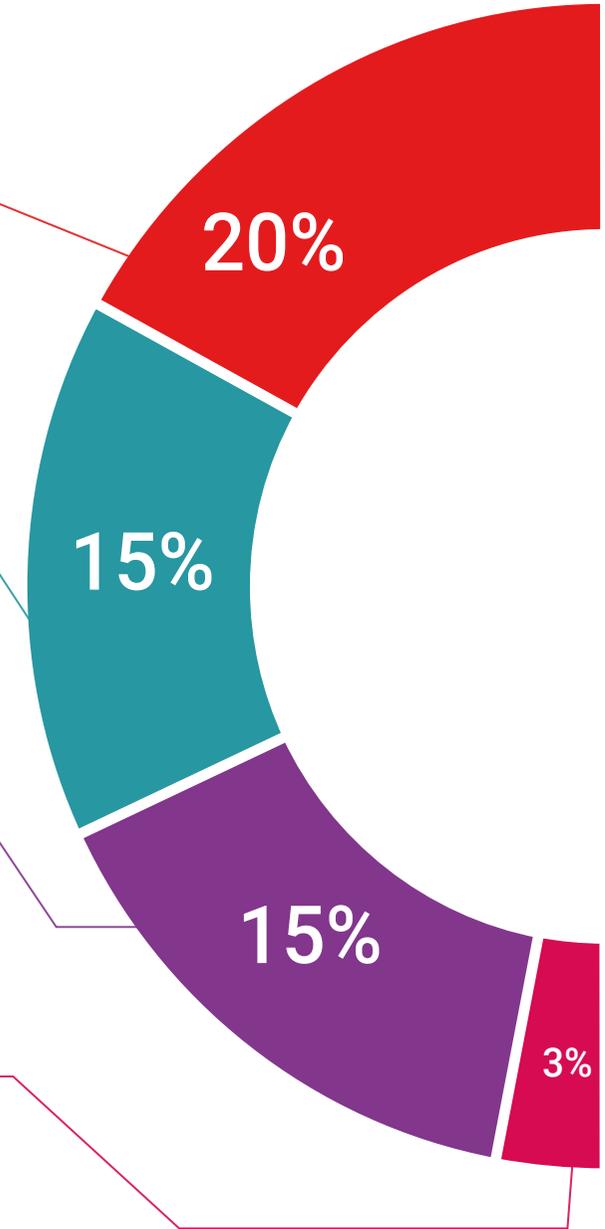
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge. This unique training system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

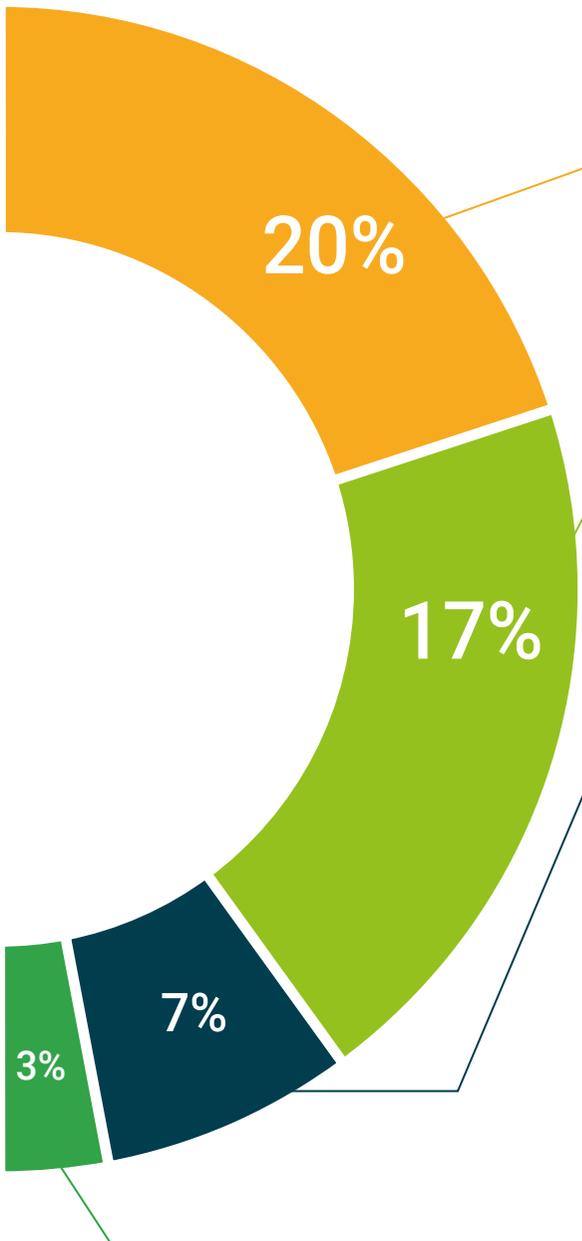


### Additional Reading

By participating in this course you will have access to a virtual library where you will be able to complement and keep your training up-to-date with the latest articles on the subject, consensus documents, international guidelines...

An invaluable resource that you will be able to use even when you finish your course with us.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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 your knowledge throughout the program through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**Learning from an expert**

Observing an expert performing a task is the most effective way to learn. It is called Learning From an Expert: a proven way to reinforce knowledge and memory of what has been learned. That's why we include this type of learning in our courses through our masterclasses.

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 our future difficult decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



# 07 Certificate

The Postgraduate Diploma in Aquaculture Pathology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



“

*Include in your training a Postgraduate Diploma in Aquaculture Pathology: an important addition of high quality for any professional in this area"*

This private qualification will allow you to obtain a **Postgraduate Diploma in Aquaculture Pathology** endorsed by **TECH Global University**, the world's largest online university.

This **TECH Global University** private qualification 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: **Postgraduate Diploma in Aquaculture Pathology**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





## Postgraduate Diploma Pathology in Aquaculture

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Global University**
- » Accreditation: **18 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

# Postgraduate Diploma Pathology in Aquaculture

