Postgraduate Certificate

Animal Welfare in Fish Farming

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Postgraduate Certificate

Animal Welfare in Fish Farming

- Modality:**Online**
- Duration: **12 weeks**
- Certificate: **TECH Global University**
- Accreditation: **12 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/veterinary-medicine/postgraduate-certificate/benessere-animali-piscicoltura**

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01

Introduction

This intensive program delves into the physiological response to stress in fish, which to some extent is different from that of other livestock species, and it presents evidence on the ability of fish to perceive pain and fear. Both facts are of crucial importance to be able to determine the degree of welfare in fish and to ensure their level of welfare is not compromised.

A complete and total update on animal welfare with the most complete and effective online program on the market"

The Postgraduate Course in Animal Welfare in Fish Farming is a new and up-to-date program that arises from the growing demand among veterinary professionals for specialized education in animal welfare to minimize animal suffering, since, nowadays, consumers demand not only healthier and safer food, but also food obtained through practices that ensure animal protection and welfare.

It addresses the concept of animal welfare and its evolution and applied ethology, one of the main welfare issues in all animal facilities.

It also covers animal ethics or bioethics as a differentiating element with respect to other similar programs. Since this topic is normally included in philosophy programs, it is usually addressed very superficially in health sciences. The Postgraduate Certificate in Animal Welfare in Fish Farming develops in depth this aspect so relevant nowadays.

The Postgraduate Certificate in Animal Welfare in Fish Farming will serve the veterinary professional to acquire a specialized and up to date knowledge in the field of animal welfare, a field increasingly demanded by society, where conflicts between animal welfare and food production are in constant demand.

Join the elite, with this highly effective program and open new paths to help you advance in your professional progress"

This **Postgraduate Certificate in Animal Welfare in Fish Farming** contains the most complete and up-to-date scientific program on the market. Its most notable 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 finishing the course.

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

A complete program that will allow you to acquire the most advanced knowledge in all the areas of intervention of a specialized veterinarian.

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.

Our teaching staff is made up of professionals from different fields related to this specialty. That way we are sure to offer the program update we intend to provide. A multidisciplinary team of professionals trained and experienced in different environments, who will efficiently impart the theoretical knowledge, but above all, who will bring the practical knowledge from their own experience to the course: one of the differential qualities of this program.

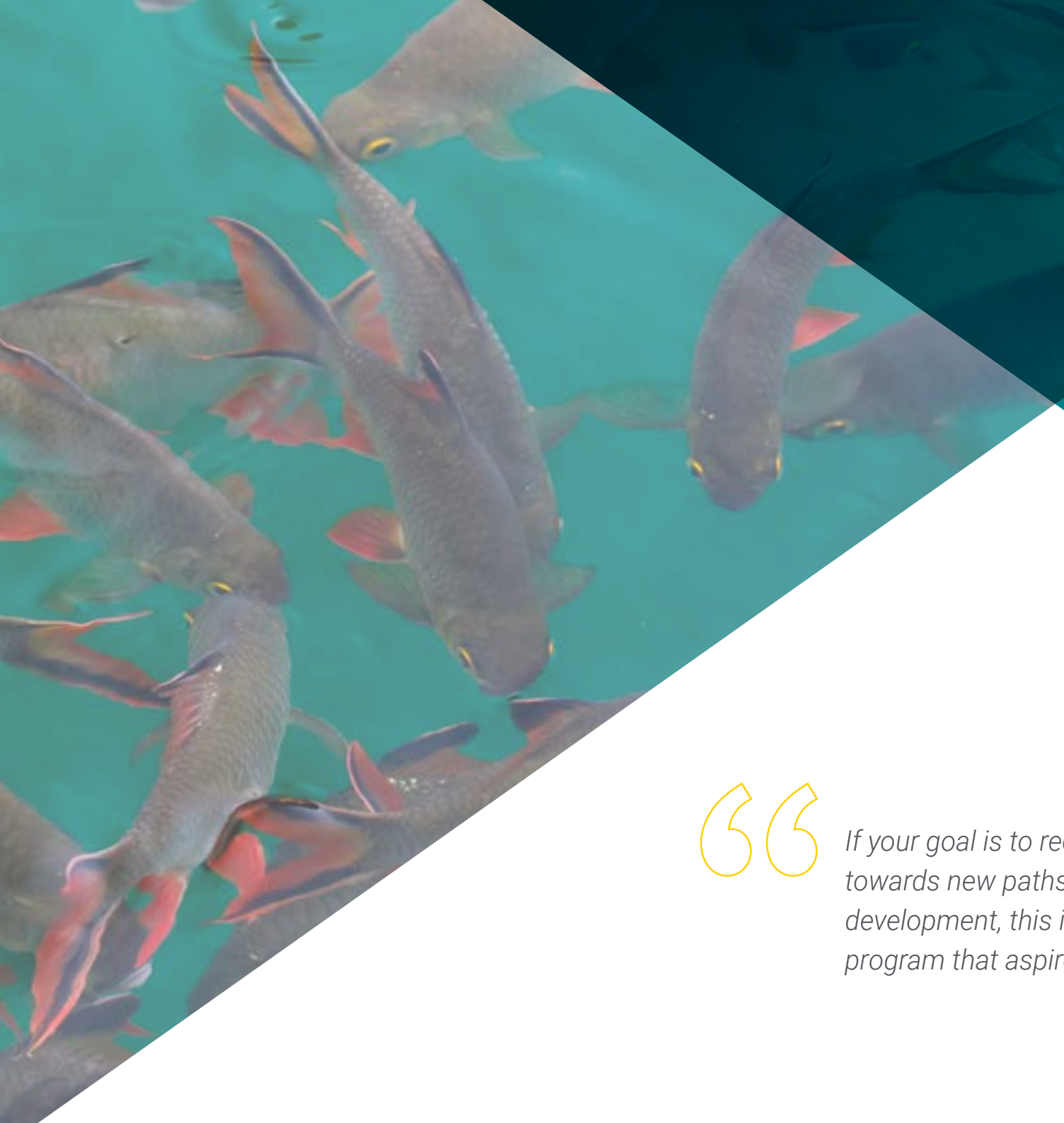
This mastery of the subject matter is complemented by the effectiveness of the methodological design. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your education.

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 with 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.

02

Objectives

Our objective is to prepare highly qualified professionals for the working experience. An objective that is complemented in a global manner, by promoting human development that lays the foundations for a better society. This objective is materialized in helping professionals to access a much higher level of competence and control. A goal that, in just a few months, you will be able to achieve, with a high intensity and effective program.



If your goal is to reorient your skills towards new paths of success and development, this is the place for you: a program that aspires to excellence".

General Objectives

- Analyze the concept of animal welfare
- Examine human involvement in animal welfare
- Establish animal welfare assessment systems
- Develop the concept of "sentient being" in fishes
- Examine welfare assessment in fish farming
- Identify facility and management problems in fish welfare
- Understand welfare in aquarium fish

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

Specific Objectives

Module 1. Animal Welfare. Concepts and Evolution

- Examine the concept of animal welfare in all its implications
- Analyze the physiological stress response in animals and its quantification
- Develop the concepts of stress and acute and chronic stress responses
- Substantiate the concepts of "eustress" and "distress"
- Determine the animal welfare implications in stress response
- Develop the concept of freedoms and needs to understand animal welfare
- Examine the concept of animal welfare assessment
- Specify current animal welfare assessment systems

Module 2. Animal Welfare in Fish Farming

- Define the physiological stress response in fish
- Analyze information on consciousness, pain and fear in fish
- Develop the most effective indicators to assess welfare in fish
- Examine measures of water quality and their implications for fish
- Discuss the main welfare issues in fish farming
- Establish the best management guidelines for fish to minimize suffering
- Examine the welfare of fish during capture in both farmed and commercial fisheries
- Determine the welfare of aquarium fish

03

Course Management

Within the concept of total quality of our program, we are proud to put at your disposal a teaching staff of the highest level, chosen for their proven experience. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

An impressive teaching staff, made up of professionals from different areas of expertise, will be your professors during the program: A unique opportunity not to be missed"

Management

Dr. Jesús de la Fuente Vázquez

- Expert Researcher in Animal Nutrition
- Researcher in the Department of Food Technology at the National Institute of Agricultural and Food Research and Technology (INTAF).
- Co-author of more than 35 research articles published in scientific journals.
- Participation in more than 14 research projects on Animal Welfare.
- Participation in 10 book chapters
- Collaborating teacher in more than 40 national and international courses on Animal Welfare.
- Teacher in university veterinary studies
- Collaborator in more than 60 communications for national and international Veterinary Congresses.
- PhD in Veterinary from the Complutense University of Madrid
- Degree in Veterinary Medicine from the Complutense University of Madrid
- Professional Master's Degree in Science in Swine Production from the University of Aberdeen.

Professors

Dr. María Teresa Díaz Díaz-Chirón

- Expert Researcher in Animal Nutrition
- Researcher in the Department of Food Technology at the National Institute of Agricultural and Food Research and Technology (INTAF).
- Senior Scientist at the National Institute of Agricultural and Food Research and Technology
- Researcher at the Agrarian Technological Institute of Castilla y León.
- Author of more than 40 articles published in scientific journals.
- Participant in more than 20 research projects on animal feed.
- Collaborating teacher in university veterinary studies.
- Contribution to more than 70 communications in national and international congresses.
- PhD in Veterinary Medicine, Complutense University of Madrid
- Degree in Veterinary Medicine from the Complutense University Madrid

04

Structure and Content

The contents have been developed by different experts, with a clear purpose: to ensure that our students acquire each and every one of the skills necessary to become true experts in this field.

A complete and well-structured program that will take you to the highest standards of quality and success.

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

Module 1. Animal Welfare. Concepts and Evolution

1.1. Evolution of the Concept of Animal Welfare, from Antiquity to Present Day
- 1.1.1. Animal Welfare in Antiquity
- 1.1.2. Introduction to the Concept of Welfare
- 1.1.3. Animal Welfare Today

1.2. Vision of the Concept of Animal Welfare from Different Cultures
- 1.2.1. Buddhism
- 1.2.2. Catholicism
- 1.2.3. Islam
- 1.2.4. Judaism
- 1.2.5. Orthodox Church
- 1.2.6. Protestantism

1.3. Concept of Animal Welfare, Approaches to Understanding It
- 1.3.1. Definitions of Animal Welfare
- 1.3.2. Emotion-Based Approach
- 1.3.3. Function-Based Approach
- 1.3.4. Ethology-Based Approach

1.4. Physiological Responses to Stress
- 1.4.1. Hypothalamus-Pituitary-Adrenal-Glands Axis

1.5. Acute and Chronic Stress Response
- 1.5.1. Physiological Responses to Chronic Stress
- 1.5.2. Physiological Responses to Acute Stress

1.6. Concepts of "Eustress" and "Distress"
- 1.6.1. Eustress: Optimal Stress
- 1.6.2. Distress: Negative Stress

1.7. The Role of Stress Response in Welfare

1.8. Freedoms and Needs
- 1.8.1. Concept of Freedoms
- 1.8.2. The Role of Freedoms in Animal Welfare
- 1.8.3. Concept of Needs

1.9. Animal Welfare Assessment Systems
- 1.9.1. Direct Indicators
- 1.9.2. Indirect Indicators

1.10. Developing Animal Welfare Assessment Protocols
- 1.10.1. TGI 35 L
- 1.10.2. *WelfareQuality* ®
- 1.10.3. AWIN (*Animal Welfare Indicators*)

Module 2. Animal Welfare in Fish Farming

2.1. Physiological Stress Response in Fish
- 2.1.1. Stress Response in Fish
- 2.1.2. Detecting and Measuring Stress Response
- 2.1.3. Cortisol as a Stress Index

2.2. Consciousness in Fish
- 2.2.1. Fish Are Capable of Suffering
- 2.2.2. Basic Brain Organization of Teleost Fish
- 2.2.3. Cognitive Capacity and Behavior Modification

2.3. Pain and Fear in Fish
- 2.3.1. Sensitivity and Consciousness
- 2.3.2. Pain
- 2.3.3. Fear

2.4. Fish Welfare Indicators
- 2.4.1. Based on the Group
- 2.4.2. Based on the Individual

2.5. Water Quality and Fish Welfare
- 2.5.1. Dissolved Oxygen
- 2.5.2. Ammonia, Nitrates, Nitrites
- 2.5.3. Carbon Dioxide, Gas Oversaturation
- 2.5.4. Suspended Solids, Heavy Metals
- 2.5.5. Acidity, Alkalinity, Hardness, Temperature, Conductivity
- 2.5.6. Water Flow

2.6. Fish Welfare under Different Production Systems
- 2.6.1. Pond Aquaculture
- 2.6.2. Continuous Flow Systems
- 2.6.3. Semi-Closed Water Circuit Systems
- 2.6.4. Water Recirculation Systems
- 2.6.5. Net Cages
- 2.6.6. Offshore Culture Systems using Sea Cages

2.7. Fish Management and Welfare Implications

2.8. Fish Welfare Problems due to Animal Density
- 2.8.1. Animal Density in Cages
- 2.8.2. Animal Density in Tanks, Ponds and *Raceways*
- 2.8.3. Animal Density and Behavior
- 2.8.4. Relation between Animal Density and Welfare

2.9. Welfare in Commercial Fishery Capture and Fish Farming
- 2.9.1. Stressors during Capture
- 2.9.2. Commercial Catching Methods: Trawling, Seining, Trammel Nets and Pots
- 2.9.3. Preparing for Capture, Crowding and Harvesting of Fish in Fish Farming

This program will allow you to advance in your career comfortably"

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

"At TECH you will NOT have live classes (which you might not be able to attend)"

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

> *TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"*

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

"The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

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.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

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.

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.

Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.

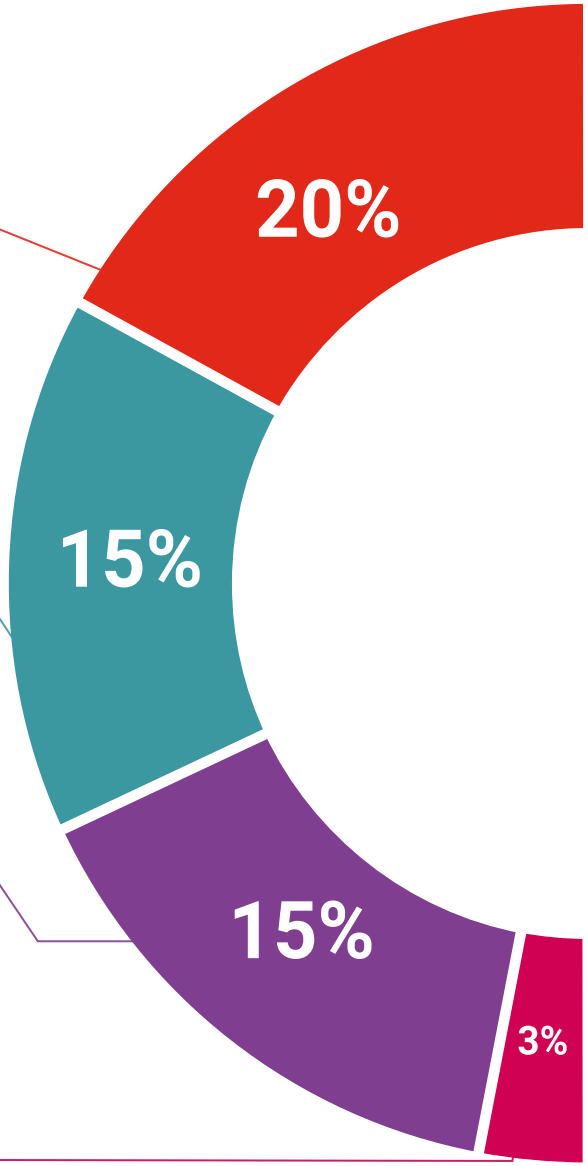
Interactive Summaries

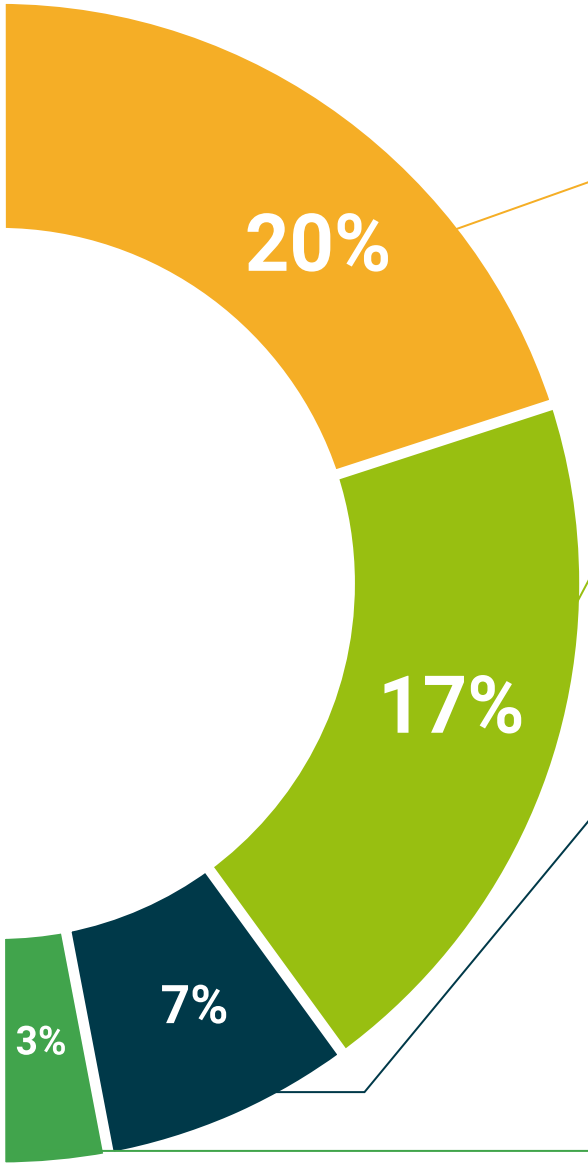
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for 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 Animal Welfare in Fish Farming guarantees, in addition to the most rigorous and up to date education, access to a Postgraduate Certificate issued by TECH Global University.

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

This program will allow you to obtain a **Postgraduate Certificate in Animal Welfare in Fish Farming** endorsed by TECH Global University, the largest digital university in the world.

TECH Global University is an official European University publicly recognized by the Government of Andorra ***(official bulletin)***. Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international educational framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of joint tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuous education and professional updating that guarantees the acquisition of competencies in its area of knowledge, conferring a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Animal Welfare in Fish Farming**

ECTS: **12**

Official Nº of Hours: **360 hours.**


tech global university

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

Postgraduate Certificate in Animal Welfare in Fish Farming

This is a private qualification of 360 hours of duration equivalent to 12 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

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

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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