

# Postgraduate Certificate

## Food Bromatology





## Postgraduate Certificate Food Bromatology

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

Website: [www.techtute.com/pk/nutrition/postgraduate-certificate/food-bromatology](http://www.techtute.com/pk/nutrition/postgraduate-certificate/food-bromatology)

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# 01

# Introduction

Food Bromatology has been closely linked to international food standards and regulations, since it ensures that products are fit for consumption and comply with quality standards. In addition, with the growing concern for making people's eating habits healthier, this field of study is in constant search for specialists in the chemical composition of food. For this reason, TECH has developed a program that is focused on providing students with a complete training on the most important technical concepts of this area of knowledge. All of this is based on a 100% online methodology, which will allow you to have more control over your time.





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*This is the best Postgraduate Certificate program in Bromatology and the only one that will help you propel your professional career to the fulfillment of your goals"*

Nowadays, the study of food and its chemical composition has become an important science because it allows to know the nutritional value and the influence that food processing generates in its characteristics. In addition, this area also manages to address issues related to environmental sustainability during the food production process and the application of new technologies in the processing of the products of this industry.

The program of the Postgraduate Certificate in food bromatology is broad and includes important aspects such as the nutritional needs of the organism and the foods that can supply them. In addition, the student will achieve an advanced knowledge of the correct way to carry out an evaluation of bromatological elements, through the mastery of elements of nutritional value.

In addition, the participants of this degree will learn the set of concepts that determine the composition of animal and vegetable products, especially dairy, meat, vegetables and fruits. In this way, the student will be able to build health promotion activities that integrate the benefits of each food according to its type.

And all of this, thanks to the innovative Relearning methodology, which allows students to learn 100% online, making their schedules more flexible and allowing them to access the multimedia resources available 24 hours a day from any device connected to the Internet. In addition, your problem-solving skills will be strengthened, since you will analyze practical cases that will place you in simulations of real scenarios.

This **Postgraduate Certificate in Food Bromatology** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Food Bromatology
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ 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



*Thanks to this program, you will be the best in your field and elevate your career to a higher level"*

“ *TECH allows you to learn at your own pace and without the need to submit to rigid study schedules”*

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.

*Deepen your understanding of nutrient analysis and food characteristics from the comfort of your own home.*

*Gain an understanding of the nutritional value of foods such as milk and meat, in order to determine the best portions of these foods within a diet.*



# 02 Objectives

The primary objective of this academic program is to provide students with a broad knowledge of the chemical composition of foods through the study of their nutrients. Thus, they will be updated on the latest developments in Bromatology and improve their skills to participate in the design of foods that meet the needs of the market, from the study of the multimedia content of this degree.







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*You will develop advanced skills in the analysis of the chemical composition of materials, thanks to this degree"*



## General Objectives

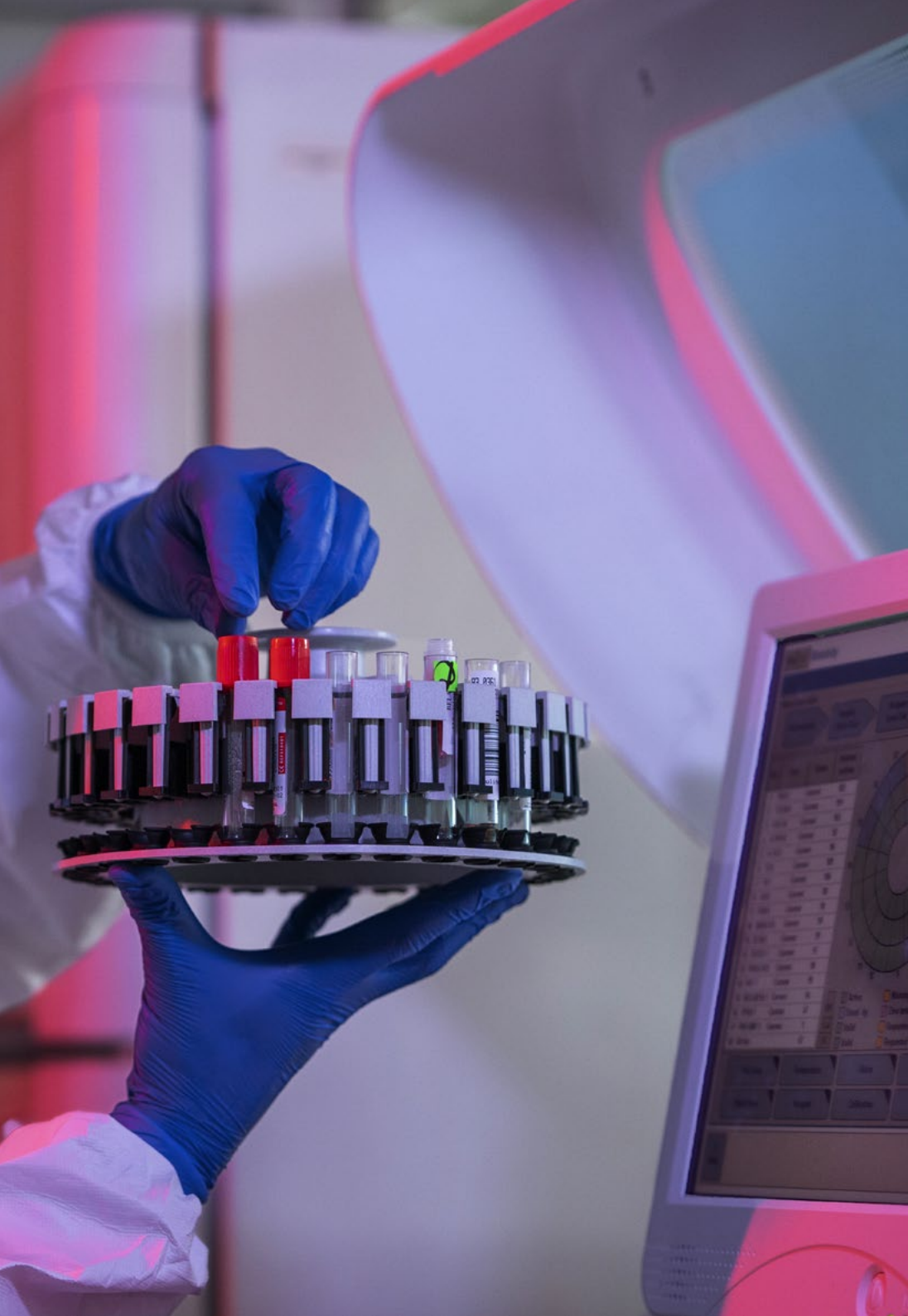
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- ◆ To know the influence that chemical engineering has had in recent years in the production and creation of foodstuffs
- ◆ Identify the main quality processes to which food products are subjected
- ◆ Apply knowledge of food chemistry in dietetics and nutrition
- ◆ Recognize the influence of Bromatology and its related aspects in the qualitative and quantitative food composition
- ◆ Analyze new technologies and their contribution to the food production process

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*With this degree, reaching your goals will be a mission possible, because you will be able to expand your knowledge in a short time"*





## Specific Objectives

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- ◆ Establish quality control procedures and manuals, as well as implement and manage quality systems
- ◆ Analyze the chemical composition of foods, raw materials, ingredients, additives and issue the corresponding reports to evaluate and improve the quality of analytical methods applied to food control
- ◆ Design and develop new processes and products to meet the needs of the market in the different aspects involved and evaluate the degree of acceptability of these products in the market, as well as their environmental risks
- ◆ Identify and classify the problems associated with different foods and their processing, including an in-depth knowledge of raw materials, interactions between components and different technological processes
- ◆ Elaborate and implement health promotion activities, at individual and collective level, contributing to the nutritional education of the population by promoting rational food consumption according to healthy guidelines and epidemiological studies
- ◆ Advise on advertising and marketing tasks, as well as on the labeling and presentation of food products, through knowledge of the latest technical aspects of each product such as its composition, functionality or processing
- ◆ To study and interpret the reports and administrative files related to a product, in order to be able to give a reasoned answer to the question that arises through knowledge of the legislation in force and its defense before the corresponding health administration

# 03

# Structure and Content

The contents that are part of the syllabus of this Postgraduate Certificate have been developed by leading experts in Nutrition. In this way, students will be able to acquire the technical concepts that encompass the study of Bromatology, allowing them to build a broader vision of this field. This, through multimedia resources and case studies, will allow students to improve their professional skills in this field.



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*A Postgraduate Certificate that will allow you to know in depth the components and characteristics of each type of food"*

## Module 1. Bromatology

- 1.1. Introduction to bromatology
  - 1.1.1. Fields of action in bromatology. Evaluation in bromatology and information sources
  - 1.1.2. Historical Background
    - 1.1.2.1. Concept of food, nutrient and anti-nutritional substance
    - 1.1.2.2. Food and Nutrition
  - 1.1.3. Nutrients and Food. Types of Nutrients
    - 1.1.3.1. Nutritional needs of the human organism
    - 1.1.3.2. Food Classification
    - 1.1.3.4. Functional food
- 1.2. Meat and Meat Derivatives
  - 1.2.1. The concept of meat Chemical composition and quality characteristics
    - 1.2.1.1. Nutritional value of meat
    - 1.2.1.2. Defects and alterations of the meat. Game meats
  - 1.2.2. Carcasses, meat parts, by-products and offal
    - 1.2.2.1. Channel: quality characteristics, classification
    - 1.2.2.2. Meat pieces: characteristics, commercial value. Adulterations
    - 1.2.2.3. Offal and by-products
  - 1.2.3. Meats preserved by cold. Chilled and frozen meat
    - 1.2.3.1. Minced meat. Business Presentations
    - 1.2.3.2. Influence of the preservation method on the characteristics of cold preserved meats
  - 1.2.4. Meat products: raw fresh and raw marinated meat products
    - 1.2.4.1. Classification and ingredients
  - 1.2.5. Raw and cured sausages and salted meats
    - 1.2.5.1. Chemical composition and nutritional value. Alterations and defects
  - 1.2.6. Heat-treated meat products and other meat by-products
    - 1.2.6.1. Chemical composition and nutritional value. Alterations and defects





### 1.3. Fish and fish by-products

#### 1.3.1. Classification and definition of fish

- 1.3.1.1. Structure of fish muscle. Chemical composition and nutritional value
- 1.3.1.2. Alterations, defects: estimation of degree of freshness
- 1.3.1.3. Fish adulteration and fraud

#### 1.3.2. Classification and definition of crustaceans and mollusks

- 1.3.2.1. Chemical composition and nutritional value
- 1.3.2.2. Estimation of the degree of freshness
- 1.3.2.3. Seafood alterations and adulterations

#### 1.3.3. Processed fish, crustaceans and mollusks products

- 1.3.3.1. Refrigeration and freezing. Drying. Salting and maturation
- 1.3.3.2. Smoking Marinated, pickled and pickling
- 1.3.3.3. Canned fish products. Fish paste. Fish sauce

#### 1.3.4. Influence of processing on the composition and characteristics of derived products

### 1.4. Milk and Derivatives

#### 1.4.1. Milk Concept and Classification

- 1.4.1.1. Physical-Chemical Features. Comparative study of the composition of different drinking milks
- 1.4.1.2. Nutritional value. Alterations and adulterations

#### 1.4.2. Classification of drinking milks

- 1.4.2.1. Pasteurized, sterilized, UHT, and concentrated milks
- 1.4.2.2. Influence of processing on its composition and characteristics
- 1.4.2.3. Alterations and defects. Modified milks

#### 1.4.3. Definition and Classification

- 1.4.3.1. Types of fermented milks: fermented milks with yeast, with lactic bacteria and molds, with thermophilic lactic bacteria
- 1.4.3.2. Probiotic dairy products. Chemical composition and nutritional value
- 1.4.3.3. Alterations and defects

#### 1.4.4. Cheeses Chemical composition and nutritional value

- 1.4.4.1. Cottage cheese and cheese substitutes
- 1.4.4.2. Alterations and defects

- 1.4.5. Cream and butter
  - 1.4.5.1. Cream: definition, classification, chemical composition and nutritional value
  - 1.4.5.2. Butter: definition, classification, chemical composition and nutritional value
  - 1.4.5.3. Alterations and defects
- 1.4.6. Ice cream and dairy desserts
  - 1.4.6.1. Ice cream: definition, classification, production, chemical composition and nutritional value, ice creams
  - 1.4.6.2. Dairy desserts
- 1.5. Eggs, egg products and fats of animal origin
  - 1.5.1. Eggs and egg products
    - 1.5.1.1. Definition and Classification. Structure. Chemical Composition
    - 1.5.1.2. Nutritional value. Quality Parameters
  - 1.5.2. Edible fats and oils
    - 1.5.2.1. Definition and classification: of animal and vegetable origin
    - 1.5.2.2. Methods of production and extraction
    - 1.5.2.3. Chemical composition and nutritional value. Quality Control
- 1.6. Cereals and Derivatives
  - 1.6.1. Classification and definition of cereals
    - 1.6.1.1. Morphological and structural characteristics
  - 1.6.2. Cereal by-products: flour, semolina and semolina
    - 1.6.2.1. Nutritional value of flours
  - 1.6.3. Processed grains and bread
    - 1.6.3.1. Bread: definition, types of bread and suitability of bread flour
    - 1.6.3.2. Composition and nutritional value
    - 1.6.3.3. Alterations and defects
  - 1.6.4. Pasta. Concept and Classification
    - 1.6.4.1. General characteristics of pasta: chemical composition and nutritional value of pasta
    - 1.6.4.2. Alterations and defects
  - 1.6.5. Common wheat products
    - 1.6.5.1. Concept and Classification
    - 1.6.5.2. Chemical composition and nutritional value
- 1.7. Legumes and vegetables
  - 1.7.1. Legumes and by-products. Definition. Classification Structural features
    - 1.7.1.1. Chemical composition and nutritional value
    - 1.7.1.2. Analytical Determinations
  - 1.7.2. Vegetables: definition and classification. Structural features
    - 1.7.2.1. Chemical composition and nutritional value
  - 1.7.3. Tubers and derivatives: definition and classification. Features structural
    - 1.7.3.1. Chemical composition and nutritional value
  - 1.7.4. Vegetable by-products: frozen, dehydrated, concentrated, ground and sterilized products
    - 1.7.4.1. Composition and nutritional value
  - 1.7.5. Definition and classification of mushrooms
    - 1.7.5.1. Chemical composition and nutritional value
    - 1.7.5.2. Alterations and defects
- 1.8. Fruits and Derivatives
  - 1.8.1. Fruits and definition. Structural features
    - 1.8.1.1. Classification and categorization. Chemical composition and nutritional value
    - 1.8.1.2. Fruit alterations
  - 1.8.2. Fruit derivatives: concentrated, frozen, dried, juices, jams, jellies, jams, compotes and candied fruits
    - 1.8.2.1. Composition and nutritional value
    - 1.8.2.3. Analytical determinations of fruits and derivatives
  - 1.8.3. Dried fruits and derivatives: concept and classification
    - 1.8.3.1. Composition and nutritional value
    - 1.8.3.2. Alterations and defects





#### 1.9. Water and beverages

1.9.1. Water and ice. Concept: Classification. Bottled drinking water. Ice

1.9.1.1. Physical-chemical and sensory characteristics of drinking waters

1.9.2. Soft drinks: concepts and types. Characteristics and composition

1.9.2.1. Processing technology

1.9.2.2. Sports, fortified and nutraceutical beverages

1.9.3. Fermented beverages

1.9.3.1. Beer: definition, types, raw materials, chemical composition and nutritional value

1.9.3.2. Defects and alterations

1.9.3.3. Wine, cider and other fermented beverages: definition and types

1.9.3.4. chemical composition and nutritional value

1.9.3.5. Defects and alterations

1.9.4. Spirits. Concept and types of distilled beverages Raw materials

1.9.4.1. Composition of distilled beverages

#### 1.10. New Food

1.10.1. Introduction and general characteristics

1.10.2. Processing techniques

1.10.3. Examples: functional foods, transgenic foods, ultra-processed foods and novel foods and novel food



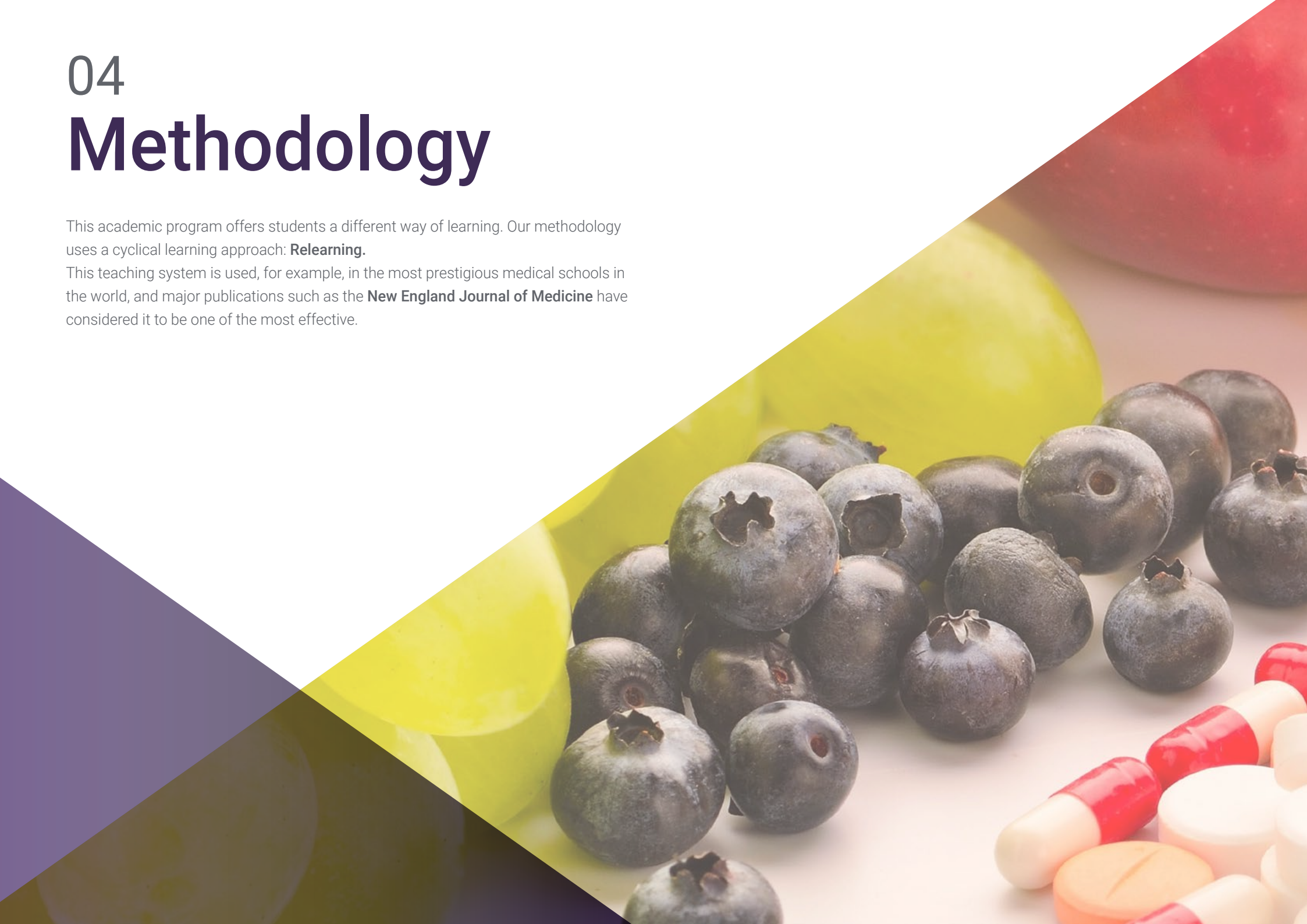
*Specialize in the science of Bromatology and access the best job offers in this sector. Start now”*

04

# 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

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH, nutritionists can 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 of professional nutritional 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. Nutritionists who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the nutritionist to better integrate knowledge into clinical practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*The nutritionist will learn through real cases and by solving 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 45,000 nutritionists have been trained with unprecedented success in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong 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.



#### Nutrition Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current nutritional counselling techniques and procedures. 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

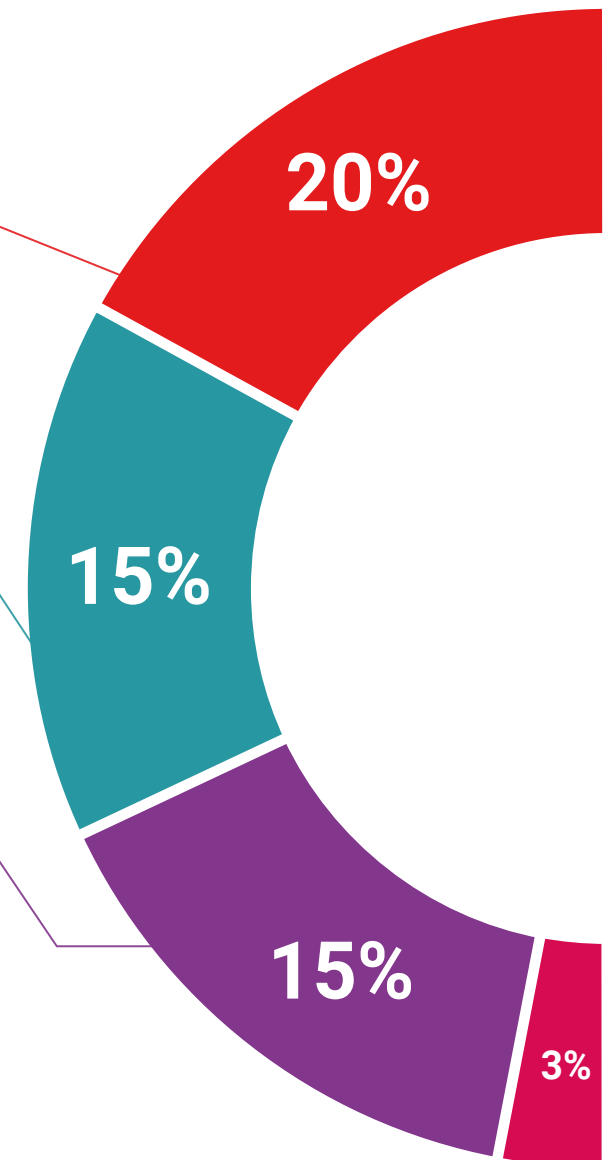
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

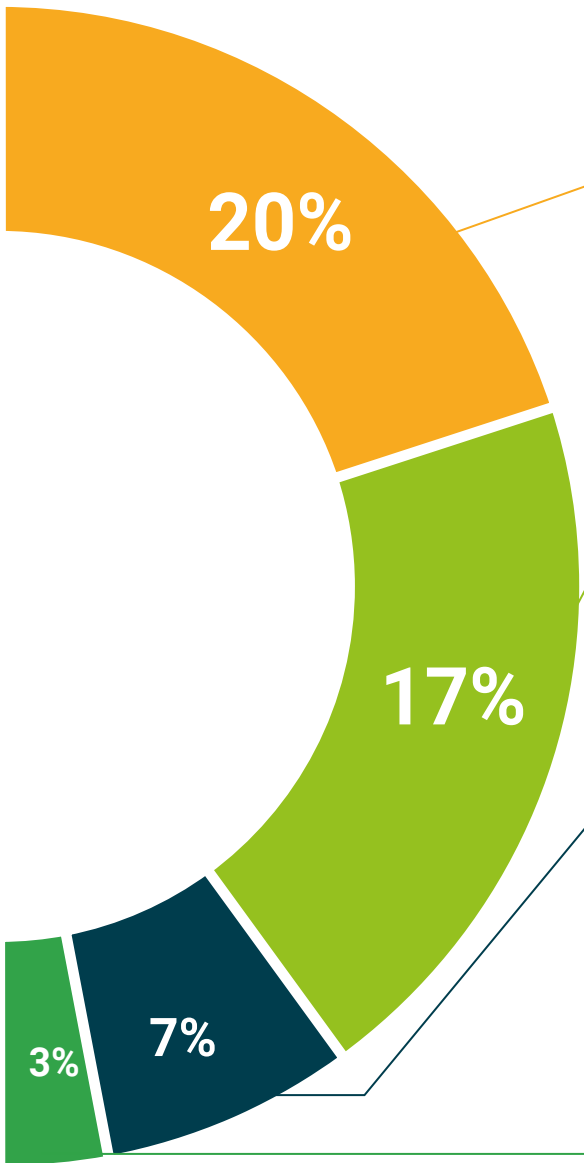


#### Additional Reading

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.



# 05 Certificate

The Postgraduate Certificate in Food Bromatology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Food Bromatology** 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 Food Bromatology**

Official N° of Hours: **150 h.**



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



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