Master's Degree
Human Microbiota

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Master's Degree
Human Microbiota

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/master-degree/master-degree-human-microbiota

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01

Introduction to the Program

The study of the Human Microbiota has gained significant relevance in recent years, becoming a key area for understanding multiple pathologies and optimizing medical treatments. According to the United Nations, the gut microbiota plays a fundamental role in digestive, immune, and metabolic health, influencing disorders such as Obesity and Diabetes. This growing interest has led to an increased demand for professionals trained in its analysis and clinical application. In this context, TECH presents an innovative qualification focused on Human Microbiota. Additionally, it is offered in a convenient 100% online format.

Understand the impact of Human Microbiota on the immune system, Metabolic and Digestive Diseases, and its role at every stage of life"

The study of Human Microbiota has revolutionized the health field, revealing its key role in the prevention, diagnosis, and treatment of various diseases. Its influence on the immune system, Metabolic Diseases, Digestive Disorders, and even Neurological conditions has generated increasing interest in both clinical and research settings. Understanding these mechanisms is essential for health professionals who seek to stay updated and apply this knowledge in their daily practice, improving the quality of life of their patients.

This Master's Degree in Human Microbiota offers a unique opportunity to delve into a rapidly expanding field. Through rigorous and up-to-date content, specialists will gain a clinical perspective of the microbiota, exploring its relationship with different pathologies and its therapeutic potential. This will not only allow them to expand their competencies and strengthen their professional profile but also open new opportunities in research and specialization. In a context where personalized medicine and biotechnology are advancing quickly, mastering this field becomes a key competitive advantage.

Thanks to its 100% online format, this university program adapts to the needs of professionals who seek to continue growing without sacrificing their lifestyle. With flexible access to content and an innovative design, it ensures a dynamic and effective learning experience from anywhere, providing the highest academic quality without geographical restrictions.

Additionally, professionals will have access to exclusive Masterclasses led by internationally renowned guest directors in the medical field.

This **Master's Degree in Human Microbiota** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of practical case studies presented by experts in Medicine
- 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 self-assessment can be used to improve learning
- Special emphasis on innovative methodologies in Medicine
- 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

You will enjoy exclusive Masterclasses taught by renowned International Guest Directors"

You will deepen your scientific knowledge of the Human Microbiota, its composition, functions, and its relationship with health"

You will understand the interactions between the Microbiota and the various systems of the body, including the immune system.

With the Relearning system you will not have to invest a great amount of study hours and you will focus on the most relevant concepts.

The teaching staff includes professionals belonging to the field of medicine, who contribute their work experience to this program, as well as renowned specialists from reference societies and prestigious universities.

Its multimedia content, created with the latest educational technology, will provide professionals with situated and contextualized learning—meaning a simulated environment that will offer immersive study designed to train you for real-life situations.

This program is designed around Problem-Based Learning, whereby the student 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 and experienced experts.

02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.

Study at the largest online university in the world and ensure your professional success. The future begins at TECH"

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.

Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

03

Syllabus

The Human Microbiota is an invisible universe with a massive impact on health. Its influence on the immune system, digestion, and even mental well-being makes it a key area for modern medicine. For this reason, this curriculum offers you a comprehensive journey through its clinical applications, from its connection to Chronic Diseases to its role in nutrition and immune response. With a practical approach based on the most recent evidence, this university program will allow medical professionals to specialize in a growing field and expand their opportunities in the Medical sector.

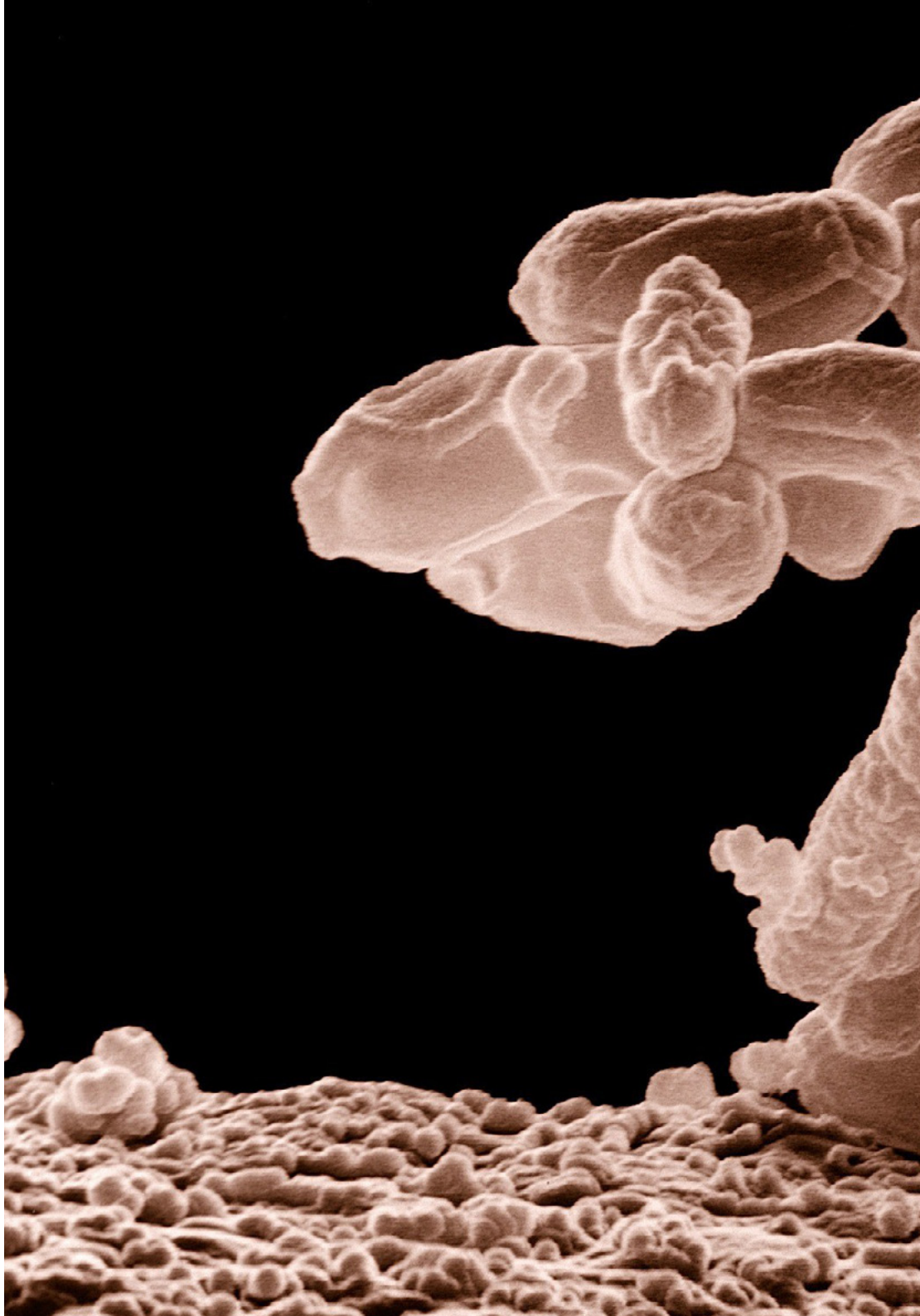
You will delve into the interpretation of Microbiota analysis tests and their application in medical diagnosis"

Module 1. Microbiota. Microbiome. Metagenomics

1.1. Definition and Relationship Between Them
1.2. Composition of the Microbiota: Types, Species and Strains
1.3. Different Human Microbiota. General Overview of Eubiosis and Dysbiosis
  1.3.1. Gastrointestinal Microbiota
  1.3.2. Oral Microbiota
  1.3.3. Skin Microbiota
  1.3.4. Respiratory Tract Microbiota
  1.3.5. Urinary Tract Microbiota
  1.3.6. Reproductive System Microbiota
1.4. Factors that Influence Microbiota Balance and Imbalance
  1.4.1. Diet and Lifestyle. Gut-Brain Axis
  1.4.2. Antibiotic Therapy
  1.4.3. Epigenetic-Microbiota Interaction. Endocrine Disruptors
  1.4.4. Probiotics, Prebiotics, Symbiotics. Concepts and Overviews
  1.4.5. Fecal Transplant, Latest Advances

Module 2. Gut Microbiota I. Intestinal Homeostasis

2.1. Gut Microbiota Studies
  2.1.1. Projects *MetaHIT, Meta-Biomed, MyNewGut, Human Microbiome Project*
2.2. Microbiota Composition
  2.2.1. Protective Microbiota (*Lactobacillus, Bifidobacterium,* Bacteroides)
  2.2.2. Immunomodulatory Microbiota (*Enterococcus faecalis* and *Escherichia coli*)
  2.2.3. Mucoprotective or Muconutritive Microbiota (*Faecalibacterium prausnitzii and Akkermansia muciniphila*)
  2.2.4. Microbiota with Proteolytic or Proinflammatory Activities (*E. coli Biovare, Clostridium, Proteus, Pseudomonas, Enterobacter, Citrobacter, Klebsiella, Desulfovibrio, Bilophila*)
  2.2.5. Fungal Microbiota (Candida, Geotrichum)



2.3. Digestive System Physiology. Composition of the Microbiota in the Different Parts of the Digestive Tract. Resident Flora and Transient or Colonizing Flora. Sterile Areas in the Digestive Tract
- 2.3.1. Esophageal Microbiota
  - 2.3.1.1. Healthy Individuals
  - 2.3.1.2. Patients (Gastric Reflux, Barrett's Esophagus, etc.)
- 2.3.2. Gastric Microbiota
  - 2.3.2.1. Healthy Individuals
  - 2.3.2.2. Patients (Gastric Ulcer, Gastric Cancer, MALT, etc)
- 2.3.3. Gallbladder Microbiota
  - 2.3.3.1. Healthy Individuals
  - 2.3.3.2. Patients (Cholecystitis, Cholelithiasis, etc.)
- 2.3.4. Small Intestine Microbiota
  - 2.3.4.1. Healthy Individuals
  - 2.3.4.2. Patients (Inflammatory Bowel Disease, Irritable Bowel Syndrome, etc.)
- 2.3.5. Colon Microbiota
  - 2.3.5.1. Healthy Individuals. Enterotypes
  - 2.3.5.2. Patients (Inflammatory Bowel Disease, Crohn's Disease, Colon Carcinoma, Appendicitis, etc

2.4. Gut Microbiota Functions: Metabolic. Nutritional and Trophic. Protective and Barrier Immunological
- 2.4.1. Interrelationships Between the Intestinal Microbiota and Distant Organs (Brain, Lung, Heart, Liver, Pancreas, etc.)

2.5. Intestinal Mucosa and Mucosal Immune System
- 2.5.1. Anatomy, Characteristics, and Functions (MALT, GALT, and BALT System)

2.6. What is Intestinal Homeostasis? Role of Bacteria in Intestinal Homeostasis
- 2.6.1. Effects on Digestion and Nutrition
- 2.6.2. Defence Stimulation, Hindering Colonization by Pathogenic Microorganisms
- 2.6.3. Production of Vitamin B and K
- 2.6.4. Production of Short Chain Fatty Acids (Butyric, Propionic, Acetic, etc.)
- 2.6.5. Production of Gases (Methane, Carbon Dioxide, Molecular Hydrogen). Properties and Functions
- 2.6.6. Lactic Acid

Module 3. Gut Microbiota II. Intestinal Dysbiosis

3.1. What is Intestinal Dysbiosis? Consequences

3.2. Intestinal Barrier. Physiology. Function. Intestinal Permeability and Hyperpermeability. Relationship between Intestinal Dysbiosis and Intestinal Hyperpermeability

3.3. Relationship of Intestinal Dysbiosis and Other Types of Disorders: Immunological, Metabolic, Neurological and Gastric (*Helicobacter Pylori*)

3.4. Consequences of the Alteration of the Intestinal Ecosystem and its Relationship to Functional Digestive Disorders

- 3.4.1. Inflammatory Bowel Disease IBD
- 3.4.2. Chronic Inflammatory Bowel Diseases: Crohn's Disease. Ulcerative Colitis
- 3.4.3. Irritable Bowel Syndrome (IBS) and Diverticulosis
- 3.4.4. Intestinal Motility Disorders. Diarrhea. Diarrhea Caused by *Clostridium Difficile*. Constipation
- 3.4.5. Digestive Disorders and Nutrient Malabsorption Problems: Carbohydrates, Proteins, and Fats
- 3.4.6. Markers of Intestinal Inflammation: Calprotectin. Eosinophil Cationic Protein (ECP). Lactoferrin. Lysozyme
- 3.4.7. Leaky Gut Syndrome. Permeability Markers: Alpha-1 Antitrypsin. Tight Junctions and their Main Function

3.5. Alteration of the Intestinal Ecosystem and its Relationship with Intestinal Infections

- 3.5.1. Viral Intestinal Infections
- 3.5.2. Bacterial Intestinal Infections
- 3.5.3. Intestinal Infections due to Parasites
- 3.5.4. Fungal Intestinal Infections. Intestinal Candidiasis

3.6. Composition of the Intestinal Microbiota in the Different Stages of Life

- 3.6.1. Variation in Gut Microbiota Composition , from the NeonatalEarly Childhood Stage to Adolescence. "Unstable Period"
- 3.6.2. Composition of the Intestinal Microbiota in Adulthood. "Stable Period"
- 3.6.3. Gut Microbiota Composition in the Elderly "Unstable Stage" Aging and Microbiota

3.7. Nutritional Modulation of Intestinal Dysbiosis and Hyperpermeability: Glutamine, Zinc, Vitamins, Probiotics, Prebiotics

3.8. Techniques for Quantitative Analysis of Microorganisms in Feces

3.9. Current Lines of Research

Module 4. Microbiota in Neonatology and Pediatrics

4.1. Mother-Child Symbiosis

4.2. Influencing Factors on the Gut Microbiota of the Mother During Pregnancy and During Birth. Influence of the Type of Delivery on the Microbiota of the New-born

4.3. Type and Duration of Breastfeeding, Influence on the Infant's Microbiota

- 4.3.1. Breast Milk: Composition of the Breast Milk Microbiota. Importance of Breastfeeding in the New-born's Microbiota
- 4.3.2. Artificial Breastfeeding. Use of Probiotics and Prebiotics in Infant Milk Formulas

4.4. Clinical Applications of Probiotics and Prebiotics in Pediatric Patients

- 4.4.1. Digestive Pathologies: Functional Digestive Disorders, Diarrhea, Necrotizing Enterocolitis. Intolerances
- 4.4.2. Non-digestive Pathologies: Respiratory and ENT, Atopic Diseases, Metabolic Diseases. Allergies

4.5. Influence of Antibiotic and other Psychotropic Treatment on the Microbiota of the Infant

4.6. Current Lines of Research

Module 5. Oral Microbiota and Respiratory Tract

5.1. Structure and Oral Ecosystems

- 5.1.1. Main Ecosystems that are Found in the Oral Cavity. Characteristics and Composition of Each of Them. Nostrils, Nasopharynx and Oropharynx

5.2. Alterations of the Oral Microbial Ecosystem: Oral Dysbiosis. Relationship with Different Oral Disease States

- 5.2.1. Cavities
- 5.2.2. Halitosis
- 5.2.3. Periodontal and Gingival Diseases
- 5.2.4. Peri-Implant Diseases
- 5.2.5. Other Infectious Diseases: *Candida Albicans*

5.3. Influence of External Agents in Oral Eubiosis and Dysbiosis. Hygiene

5.4. Structure of the Respiratory Tract and Composition of the Microbiota and Microbiome

- 5.4.1. Upper Respiratory Tract (Nasopharynx, Middle Ear, Sinuses, and Tonsils)
- 5.4.2. Lower Respiratory Tract (Trachea, Lungs, Bronchi, Bronchioles, and Alveoli)

5.5. Factors that Regulate the Respiratory Microbiota: Microbial Immigration, Microbial Elimination and Reproduction Rates of its Members
  5.5.1. Microbial Immigration
  5.5.2. Elimination of Microbes and the Reproduction Rates of its Members
5.6. Alteration of the Respiratory Tract Microbiota and its Relationship with Different Respiratory Tract Diseases
5.7. Therapeutic Manipulation of the Microbiome of the Oral Cavity in Prevention and Treatment of Diseases Related to it
5.8. Therapeutic Manipulation of the Microbiome of the Respiratory Tract in Prevention and Treatment of Related Diseases
5.9. Current Lines of Research and Clinical Applications

Module 6. Microbiota and the Immune System

6.1. Immune System Physiology: What is Immunity?
  6.1.1. Immune System Components
    6.1.1.1. Lymphoid Tissue
    6.1.1.2. Immune Cells
    6.1.1.3. Chemical Systems
6.2. Organs Involved in Immunity
  6.2.1. Primary Organs
  6.2.2. Secondary Organs
6.3. Innate, Non-Specific, or Natural Immunity
6.4. Acquired, Adaptive, or Specific Immunity
6.5. Nutrition and Lifestyle and their Interaction with the Immune System and the Microbiota
6.6. Functional Foods and their Effect on the Immune System
  6.6.1. Probiotics, Prebiotics and Symbiotics
  6.6.2. Nutraceuticals and Functional Foods
6.7. Bidirectional Relationship between Microbiota and Neuroimmunoendocrine System
6.8. Microbiota, Immunity, and Nervous System Disorders: Anxiety, Depression, Autism, Schizophrenia, or Alzheimer's Disease
6.9. The Gut-Microbiota-Brain Axis
6.10. Current Lines of Research
6.11. Microbiota, Immunity, and Nervous System Disorders: Anxiety, Depression, Autism, Schizophrenia, or Alzheimer's Disease
6.12. The Gut-Microbiota-Brain Axis
6.13. Current Lines of Research

Module 7. Skin Microbiota

7.1. Skin Physiology
  7.1.1. Structure of the Skin: Epidermis, Dermis, and Hypodermis
  7.1.2. Functions of the Skin
  7.1.3. Microbial Composition of the Skin
7.2. Factors that Regulate the Type of Bacterial Flora in the Skin
  7.2.1. Sweat Glands, Sebaceous Glands, Desquamation
  7.2.2. Factors that Alter the Ecology of the Skin and Its Microbiota
7.3. Skin Immune System
  7.3.1. Epidermis, Essential Element of Our Defenses
  7.3.2. Elements of the Skin Immune System: Cytokines, Keratinocytes, Dendritic Cells, Lymphocytes, Antimicrobial Peptides
  7.3.3. Influence of the Skin Microbiota on the Skin Immune System. *Staphylococcus Epidermidis, Staphylococcus Aureus*
7.4. Alteration of the Normal Skin Microbiota (Dysbiosis)
  7.4.1. Impaired Barrier Function
7.5. Triggered Skin Diseases
  7.5.1. Psoriasis (*Streptococcus Pyogenes*)
  7.5.2. Acne Vulgaris
  7.5.3. Atopic Dermatitis
  7.5.4. Rosacea
7.6. Influence of the Use of Probiotics in the Prevention and Treatment of Different Skin Diseases
7.7. Current Lines of Research

Module 8. Genitourinary Tract Microbiota

8.1. Genitourinary Tract Physiology and Microbial Composition
- 8.1.1. In Men
- 8.1.2. In Women

8.2. Microorganisms Causing Urinary Tract Infections: Uropathogens. Relationship with the Alteration of the Microbiota in Men and Women
- 8.2.1. Enteric Bacteria, Generally Gram-Negative Aerobic Bacteria: E. Coli, Enterobacteria. *Klebsiella* or *Proteus Mirabilis* or Pseudomonas Aeruginosa
- 8.2.2. Gram-Positive Bacteria: *Staphylococcus Saprophyticus*, etc

8.3. Vaginal Microbiota and its Modification with Age
- 8.3.1. Infant Age
- 8.3.2. Fertile Age
- 8.3.3. Adult Age (Menopause)

8.4. Alteration of the Vaginal Homeostasis and its Relationship with Infectious Pathologies
- 8.4.1. Vaginitis
  - 8.4.1.1. Chlamydia
  - 8.4.1.2. Bacterial Vaginosis
  - 8.4.1.3. Vaginal Candidiasis
  - 8.4.1.4. Vaginal Tricomoniasis
  - 8.4.1.5. Viral Vaginitis
- 8.4.2. Non-Infectious Vaginitis

8.5. Probiotics in the Prevention of the Main Genitourinary Tract Infections: UTI (Cystitis/ Urethritis), Prostatitis, Pyelonephritis, Vaginal infections, and infertility

8.6. Current Lines of Research

Module 9. Relationship Between Intolerances/Allergies and Microbiota

9.1. Microbiota Changes in Patients on Food Exclusion Diets
- 9.1.1. Eosinophilic Esophagitis (EoE)

9.2. Microbiota Changes in Patients on Food Exclusion Diets: Intolerance to Dairy
- 9.2.1. Lactose Intolerance
- 9.2.2. Intolerant to Lactic Proteins: Caseins, Albumins, etc
- 9.2.3. People Allergic to Milk

9.3. Microbiota Changes in Patients on Food Exclusion Diets: Gluten
  9.3.1. Alteration of the Intestinal Microbiota in Patients with Gluten Intolerance
  9.3.2. Alteration of the Intestinal Microbiota in Celiac Patients
  9.3.3. Role of Probiotics and Prebiotics in the Recovery of the Microbiota in Gluten Intolerant and Celiacs
9.4. Microbiota and Biogenic Amines
9.5. Current Lines of Research

Module 10. Probiotics, Prebiotics, Microbiota and Health

10.1. Probiotics: Definition, History, Mechanisms of Action
10.2. Prebiotics: Definition, Types of Prebiotics (Starch, Inulin, FOS Oligosaccharides), Mechanisms of Action
10.3. Clinical Applications of Probiotics and Prebiotics in Gastroenterology
10.4. Clinical Applications of Endocrinology and Cardiovascular Disorders
10.5. Clinical Applications of Probiotics and Prebiotics in Urology
10.6. Clinical Applications of Probiotics and Prebiotics in Gynecology
10.7. Clinical Applications of Probiotics and Prebiotics in Immunology: Autoimmunity, Pulmonology, Vaccines
10.8. Clinical Applications of Probiotics and Prebiotics in Nutritional Diseases. Obesity and Eating Disorders. Metabolism, Malnutrition and Malabsorption of Nutrients
10.9. Clinical Applications of Probiotics and Prebiotics in Neurological Diseases. Mental Health. Old Age
10.10. Clinical Applications of Probiotics and Prebiotics in Critically Ill Patients. Cancer
10.11. Dairy Products as a Natural Source of Probiotics and Prebiotics. Fermented Milk

You will explore clinical intervention strategies such as the use of probiotics, prebiotics, symbiotics, and personalized nutrition"

04

Teaching Objectives

The main objective of this university qualification is to provide in-depth and up-to-date knowledge on Human Microbiota and its impact on health. Additionally, it encourages critical analysis of the most recent scientific evidence, allowing for the understanding of its influence on Metabolic, Immune, and Neurological Diseases. Through a practical and multidisciplinary approach, the program aims to equip professionals to interpret, apply, and develop innovative strategies that optimize health through the balance of the Microbiota.

Discover how the Microbiota influences nutrient absorption, metabolism, and response to different types of diets"

General Objectives

- Understand the role of the Microbiota in human health and its relationship with the main systems of the body
- Analyze the influence of the Microbiota on the development of the immune system and its role in Autoimmune Diseases
- Explore the relationship between Microbiota, metabolism, and diseases such as Obesity and Diabetes
- Identify the interaction of the Microbiota with antibiotics, probiotics, and prebiotics for clinical application
- Study the impact of the Microbiota on mental health and the gut-brain axis
- Evaluate the importance of the Microbiota at different stages of life, such as infancy, pregnancy, and old age
- Learn the most advanced tools and methodologies for analyzing the Microbiota in medical practice
- Apply therapeutic strategies based on the modulation of the Microbiota to improve patient health
- Interpret the most recent scientific evidence in the field of Microbiota and its impact on various pathologies
- Develop a critical and multidisciplinary approach to the implementation of knowledge about Microbiota in clinical and research settings

Specific Objectives

Module 1. Microbiota. Microbiome. Metagenomics

- Update and clarify general and key terms for a full understanding of the subject such as Microbiome, Metagenomics, Microbiota, Symbiosis or Dysbiosis
- Delve into how drugs targeting human systems can negatively impact the intestinal Microbiota, in addition to the well-known impact of antibiotics

Module 2. Gut Microbiota I. Intestinal Homeostasis

- Analyze the microbial communities that coexist in symbiosis with humans, gaining deeper insight into their structure, functions, and how these communities can be altered due to factors such as diet or lifestyle
- Understand the relationship between intestinal pathologies like SIBO, IBS, Crohn's disease, and Intestinal Dysbiosis

Module 3. Gut Microbiota II. Intestinal Dysbiosis

- Identify the intestinal Microbiota as the central axis of the human Microbiota and detect its interrelation with the rest of the body, its methods of study, and clinical applications to maintain good health
- Evaluate the clinical impact of supplementation with glutamine, zinc, vitamins, probiotics, and prebiotics in restoring the intestinal barrier and the Microbiota composition in patients with irritable bowel syndrome (IBS) associated with dysbiosis

Module 4. Microbiota in Neonatology and Pediatrics

- Master the most influential factors of the maternal intestinal Microbiota during childbirth and gestation
- Explore the clinical applications of probiotics and prebiotics in pediatric patients

Module 5. Oral Microbiota and Respiratory Tract

- Understand the mechanisms by which probiotics are proposed as preventatives in the formation of dental caries and periodontal diseases
- Gain in-depth knowledge of the oral and respiratory structures and the ecosystems living within them, examining how alterations in these ecosystems are directly related to many associated pathologies

Module 6. Microbiota and the Immune System

- Analyze the bidirectional relationship between the Microbiota and the neuroimmune system
- Master the gut-microbiota-brain axis and the pathologies generated from its imbalance

Module 7. Skin Microbiota

- Identify the factors that regulate the type of bacterial flora on the skin
- Apply approaches to address skin pathologies triggered by microbial imbalances

Module 8. Genitourinary Tract Microbiota

- Analyze the primary microorganisms responsible for urinary tract infections and their relationship with alterations in the Microbiota in both men and women
- Understand the applicability of probiotics in preventing the main genitourinary tract infections

Module 9. Relationship Between Intolerances/Allergies and Microbiota

- Relate negative modulation in the Microbiota to the onset of food intolerances and allergies
- Delve into changes in the Microbiota in patients following gluten exclusion diets

Module 10. Probiotics, Prebiotics, Microbiota and Health

- Identify potential adverse effects and risks of probiotics in certain patients
- Analyze the various clinical applications of probiotics and prebiotics in areas such as Urology, Gynecology, Gastroenterology, and Immunology

Analyze the impact of dysbiosis in diseases like Obesity, Diabetes, and Digestive Diseases"

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.

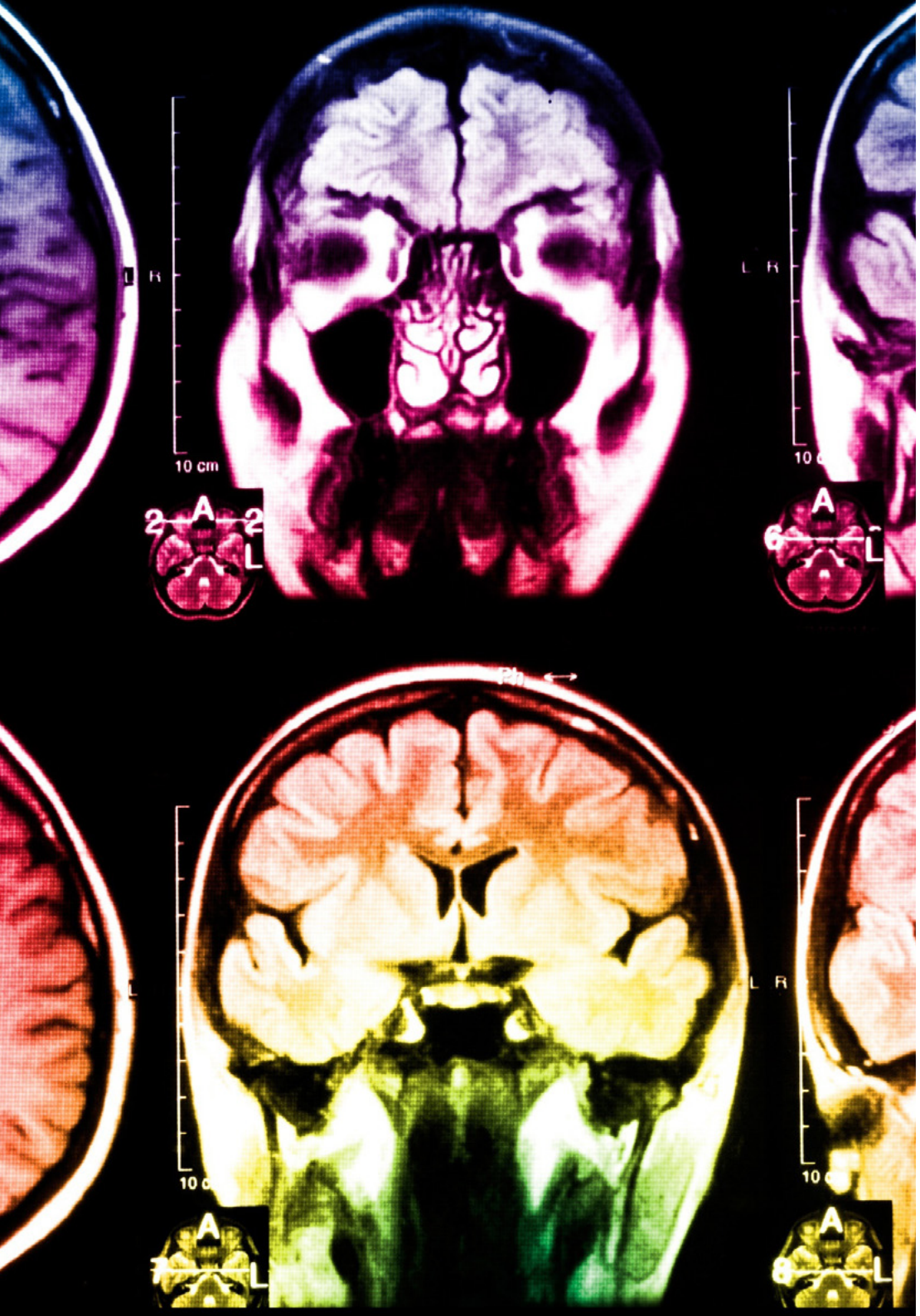
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

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.

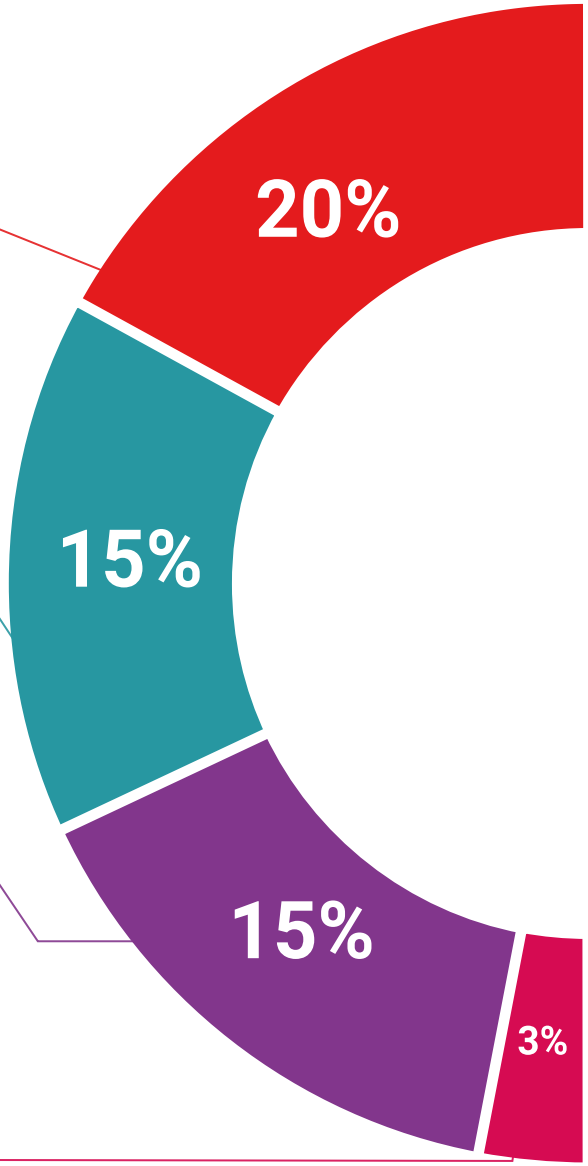
Interactive Summaries

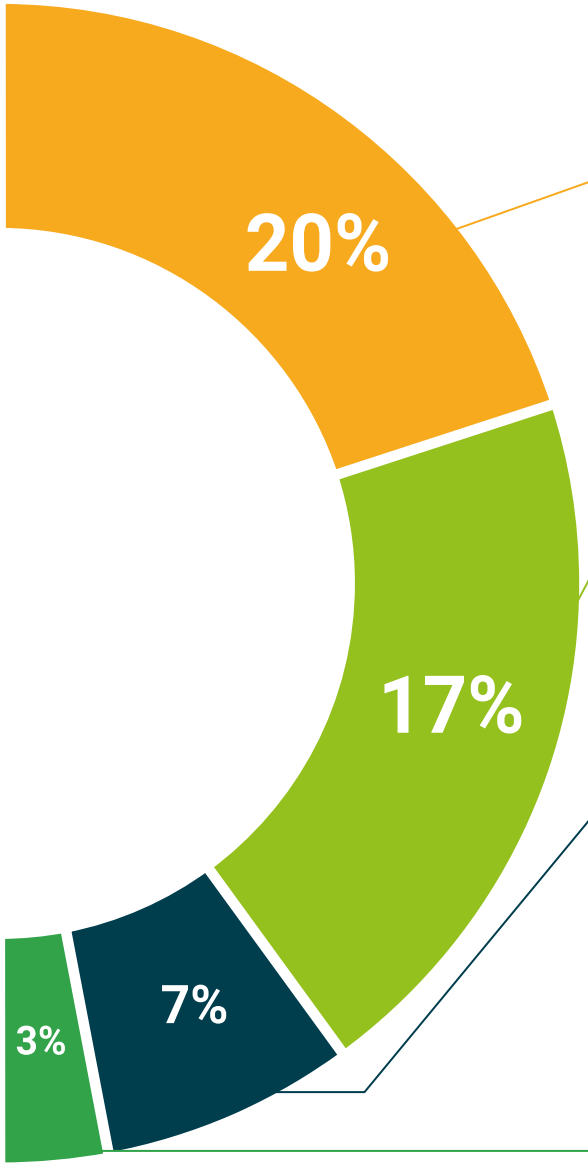
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Teaching Staff

The teaching staff of this program is made up of prestigious specialists with extensive experience in the study and application of the Microbiota across various areas of health. Thanks to their experience in research, clinical practice, and the development of innovative solutions, they offer an updated and applied perspective relevant to professional practice. Moreover, their dynamic and evidence-based approach enables professionals to acquire deep knowledge and practical strategies for their professional work. Through their expert guidance, participants will gain an enriching specialization that will allow them to advance in their careers with high-level preparation.

The teaching team of this Postgraduate Master's Degree is composed of true experts in Human Microbiota"

International Guest Director

Harry Sokol, M.D. is internationally recognized in the field of **Gastroenterology** for his research on **Intestinal Microbiota**. With more than 2 decades of experience, he has established himself as a **true scientific authority** thanks to his numerous studies on the role of **microorganisms in the human body** and their impact on **chronic inflammatory bowel diseases**. In particular, his work has revolutionized medical understanding of this organ, often referred to as the **"second brain."**

Among Dr. Sokol's contributions, he and his team have opened a new line of advances on the bacterium ***Faecalibacterium prausnitzii*** In turn, these studies have led to crucial discoveries about its **anti-inflammatory effects**, opening the door to **revolutionary treatments**.

In addition, the expert is distinguished by his **commitment** to the **dissemination of knowledge**, whether by teaching academic programs at the Sorbonne University or by publishing works such as the **comic book** *The Extraordinary Powers of the Belly*. His scientific publications appear continuously in **world-renowned journals** and he is invited to **specialized congresses.** At the same time, he carries out his clinical work at the **Saint-Antoine Hospital** (AP-HP/University Hospital Federation IMPEC/Sorbonne University), one of the most renowned hospitals in Europe

In addition, Dr. Sokol began his **medical** studies at the Paris Cité University, showing early on a strong interest in **health research**. A chance meeting with the eminent Professor Philippe Marteau led him to **Gastroenterology** and the enigmas of the **Intestinal Microbiota**. Throughout his career, he has also broadened his horizons by specializing in the United States, at Harvard University, where he shared experiences with **leading scientists**. Upon his return to France, he founded his **own team** where he investigates **Fecal Transplantation**, offering state-of-the-art therapeutic innovations.

Dr. Sokol, Harry

- Director of Microbiota, Gut and Inflammation at Sorbonne University, Paris, France
- Specialist Physician at the Gastroenterology Department of the Saint-Antoine Hospital (AP-HP), Paris, France
- Group Leader at the Institut Micalis (INRA)
- Coordinator of the Center of Microbiome Medicine of Paris FHU
- Founder of the pharmaceutical company Exeliom Biosciences (Nextbiotix)
- President of the Fecal Microbiota Transplantation Group
- Medical Specialist in different hospitals in Paris
- PhD in Microbiology at the Université Paris-Sud
- Postdoctoral stay at the Massachusetts General Hospital, Harvard University Medical School
- Degree in Medicine, Hepatology and Gastroenterology at Université Paris Cité

Thanks to TECH, you will be able to learn with the best professionals in the world"

Guest Directors

Ms. Sánchez Romero, María Isabel

- Area Specialist in the Microbiology Service at the Puerta de Hierro Majadahonda University Hospital
- PhD in Medicine and Surgery by the University of Salamanca
- Medical Specialist in Microbiology and Clinical Parasitology
- Member of the Spanish Society of Infectious Diseases and Clinical Microbiology
- Technical Secretary of the Madrid Society of Clinical Microbiology

Dr. Portero, María Francisca

- Acting Head of the Microbiology Department at the Puerta de Hierro Majadahonda University Hospital
- Specialist in Microbiology and Clinical Parasitology by the Puerta de Hierro University Hospital
- PhD in Medicine from the Autonomous University of Madrid
- Postgraduate degree in Clinical Management from the Gaspar Casal Foundation
- Research stay at the Presbyterian Hospital of Pittsburgh through a FISS grant

Dr. Alarcón Cavero, Teresa

- Biologist Specialist in Microbiology at La Princesa University Hospital
- Head of Group 52 of the Research Institute of the La Princesa Hospital
- Bachelor's Degree in Biological Sciences, specializing in Fundamental Biology from the Complutense University of Madrid
- Master's Degree in Medical Microbiology from the Complutense University of Madrid

Dr. Muñoz Algarra, María

- Head of Patient Safety at the Microbiology Department of the Puerta de Hierro Majadahonda University Hospital
- Area Specialist in the Microbiology Unit of Puerta de Hierro Majadahonda University Hospital, Madrid
- Collaborator in the Department of Preventive Medicine and Public Health and Microbiology at the Autonomous University of Madrid
- Doctor in Pharmacy from the Complutense University of Madrid

Dr. López Dosil, Marcos

- Specialist in Microbiology and Parasitology at San Carlos Clinical University Hospital
- Specialist in Microbiology and Parasitology at the Móstoles Hospital
- Master's Degree in Infectious Diseases and Antimicrobial Treatment from the CEU Cardenal Herrera University
- Master's Degree in Tropical and Health Medicine from the Autonomous University of Madrid
- Expert in Tropical Medicine by the Autonomous University Madrid

Anel Pedroche, Jorge

- Specialist in Microbiology Department of the Puerta de Hierro Majadahonda University Hospital
- Bachelor's Degree in Pharmacy from the Complutense University of Madrid
- Course in Interactive Sessions on Hospital Antibiotherapy by MSD
- Course on Infection Update in the Hematologic Patient by the Puerta de Hierro Hospital
- Attendance at the XXII Congress of the Spanish Society of Infectious Diseases and Clinical Microbiology

Management

Ms. Fernández Montalvo, María Ángeles

- Head of Naintmed - Nutrition and Integrative Medicine
- Director of the Master's Degree in Human Microbiota at CEU University
- Parapharmacy Manager, Nutrition and Natural Medicine professional at Parafarmacia Natural Life
- Bachelor's degree in Biochemistry from the University of Valencia
- Certified in Natural and Orthomolecular Medicine
- Postgraduate in Food, Nutrition and Cancer: Prevention and Treatment
- Master's Degree in Integrative Medicine from CEU University
- University Expert in Nutrition, Dietetics and Diet Therapy
- Expert in Vegetarian, Clinical, and Sports Nutrition
- Expert in Current Use of Nutricosmetics and Nutraceuticals

Faculty

Dr. Uberos, José

- Head of section in the Neonatology area of the San Cecilio Clinical Hospital of Granada
- Specialist in Pediatrics and Child Care
- Associate Professor of Pediatrics, University of Granada
- Vocal Bioethics Research Committee of the Province of Granada (Spain)
- Coeditor of the Signs and Symptoms Journal
- Professor Antonio Galdo Award. Society of Pediatrics of Eastern Andalucía
- Editor of the Journal of the Pediatric Society of Eastern Andalusia (Bol. SPAO)
- Doctor of Medicine and Surgery
- Degree in Medicine from the University of Santiago de Compostela
- Member of the Board of the Pediatric Society of Eastern Andalusia

Ms. López Martínez, Rocío

- Physician in the area of Immunology at the Vall d'Hebron Hospital
- Internal Biologist in Immunology at Central University Hospital of Asturias
- Master in Biostatistics and Bioinformatics, Universidad Oberta of Catalunya

Ms. Bueno García, Eva

- Predoctoral researcher in Immunosenescence at the Immunology Service of the Central University Hospital of Asturias (HUCA)
- Degree in Biology from the University of Oviedo
- Master's Degree in Biomedicine and Molecular Oncology from the University of Oviedo
- Molecular biology and immunology courses

Dr. Verdú López, Patricia

- Medical Specialist in Allergology at the Beata María Ana Hospital of Sisters Hospitals
- Medical Specialist in Allergology at Inmunomet Health and Integral Wellness Center
- Research doctor in Allergology at the San Carlos Hospital
- Specialist in Allergology at the University Hospital Dr. Negrín in Las Palmas of Gran Canaria
- Bachelor's Degree in Medicine from the University of Oviedo
- Master's Degree in Aesthetics and Antiaging Medicine at the Complutense University of Madrid

Ms. Rodríguez Fernández, Carolina

- Biotechnology Researcher at Adknoma Health Research
- Master in Clinical Trials Monitoring by ESAME Pharmaceutical Business School
- Master's Degree in Food Biotechnology from the University of Oviedo
- University Expert in Digital Teaching in Medicine and Health by CEU Cardenal Herrera University

Dr. Suárez Rodríguez, Marta

- Gynecologist specialized in Senology and Breast Pathology
- Researcher and University Professor
- PhD in Medicine and Surgery from the Complutense University of Madrid
- Bachelor's Degree in Medicine and Surgery from Complutense University of Madrid
- Master's Degree in Senology and Breast Pathology from the Autonomous University of Barcelona

Dr. Gonzalez Rodríguez, Silvia Pilar

- Deputy Medical Director, Research Coordinator and Clinical Chief of the Menopause and Osteoporosis Unit at Gabinete Médico Velázquez
- Specialist in Gynecology and Obstetrics at HM Gabinete Velázquez
- Medical Expert at Bypass Comunicación en Salud, SL
- Key Opinion Leader of several international pharmaceutical laboratories
- Doctor in Medicine and Surgery from the University of Alcalá de Henares, specializing in Gynecology
- Specialist in Mastology by the Autonomous University of Madrid
- Master's Degree in Sexual Orientation and Therapy from the Sexological Society of Madrid
- Master's Degree in Climacteric and Menopause from the International Menopause Society
- Postgraduate Diploma in Epidemiology and New Applied Technologies from the UNED (Spanish Distance Learning University)
- University Diploma in Research Methodology from the Foundation for the Training of the Medical Association and the National School of Health of the Carlos III Health Institute

Dr. Rioseras de Bustos, Beatriz

- Microbiologist and renowned researcher
- Resident in immunology at HUCA
- Member of the Biotechnology of Nutraceuticals and Bioactive Compounds Research Group (Bionuc) of the University of Oviedo
- Member of the Microbiology Area of the Department of Functional Biology
- Residency in the Southern Denmark University
- Doctor in Microbiology from the University of Oviedo
- Master's Degree in Neuroscience Research from the University of Oviedo

Dr. Lombó Burgos, Felipe

- PhD in Biology
- Head of the BIONUC Research Group, University of Oviedo
- Former Director of the Research Support Area of the AEI Project
- Member of the Microbiology Area of the University of Oviedo
- Co-author of the research *Biocidal nanoporous 'membranes with inhibitory activity of biofilm formation at critical points in the production process of the dairy industry*
- Head of the study on 100% natural acorn-fed ham against inflammatory bowel diseases
- Speaker III Congress of Industrial Microbiology and Microbial Biotechnology

Dr. Alonso Arias, Rebeca

- Director of the Immunosenescence research group of the HUCA Immunology Service
- Specialist Immunology Physician at the Central University Hospital of Asturias
- Numerous publications in international scientific journals
- Research work on the association between the microbiota and the immune system
- 1st National Award for Research in Sports Medicine, 2 occasions

Dr. Álvarez García, Verónica

- Assistant Physician of the Digestive Area at the Río Hortega University Hospital
- Specialist in Digestive System at the Central Hospital of Asturias
- Speaker at the XLVII Congress SCLECARTO
- Bachelor's Degree in Medicine and Surgery
- Digestive System Specialist

Dr. Gabaldon Estevani, Toni

- IRB and BSC senior group leader
- Co-founder and Scientific Advisor (CSO) of Microomics SL
- ICREA Research Professor and Group Leader of the Comparative Genomics Laboratory
- Doctor of Medical Sciences, Radbout University Nijmegen
- Corresponding Member of the Royal National Academy of Pharmacy of Spain
- Member of the Spanish Young Academy

Dr. Fernández Madera, Juan Jesus

- Allergologist at HUCA
- Former Head of the Allergology Unit, Monte Naranco Hospital, Oviedo
- Allergology Service, Central University Hospital of Asturias
- Member of: Alergonorte Board of Directors, SEAIC Rhinoconjunctivitis Scientific Committee, Medicinatv.com Advisory Committee

Dr. Méndez García, Celia

- Biomedical Researcher at Novartis Laboratories in Boston, USA
- Doctor in Microbiology from the University of Oviedo
- Member of the North American Society for Microbiology

Dr. Narbona López, Eduardo

- Speciality Neonatal Unit, San Cecilio University Hospital
- Advisor to the Department of Pediatrics, University of Granada
- Member of: Pediatric Society of Western Andalusia and Extremadura, Andalusian Association of Primary Care Pediatrics

Dr. López Vázquez, Antonio

- Area Specialist in Immunology, Central University Hospital of Asturias, Spain
- Collaborator of the Carlos III Health Institute
- Advisor of Aspen Medical
- Doctor of Medicine, University of Oviedo

Dr. Losa Domínguez, Fernando

- Gynecologist at the Sagrada Familia Clinic of HM Hospitals
- Doctor in private practice in Obstetrics and Gynecology in Barcelona
- Expert in Gynecoesthetics by the Autonomous University of Barcelona
- Member of: Spanish Association for the Study of Menopause Spanish Society of Phytotherapeutic Gynecology, Spanish Society of Obstetrics and Gynecology, Board of the Menopause Section of the Catalan Society of Obstetrics and Gynecology

Dr. López López, Aranzazu

- Specialist in Biological Sciences Researcher
- Researcher at Fisabio Foundation
- Assistant Researcher at the University of the Balearic Islands
- PhD in Biological Sciences from the University of the Balearic Islands

07

Certificate

The Master's Degree in Human Microbiota guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Master's Degree issued by TECH Global University.

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

This private qualification will allow you to obtain a diploma for the **Master's Degree in Human Microbiota** endorsed by TECH Global University, the world's largest online university.

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 training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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: **Master's Degree in Human Microbiota**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**


tech global university

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

Master's Degree in Human Microbiota

This is a private qualification of 1,800 hours of duration equivalent to 60 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


Master's Degree in Human Microbiota

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Microbiota. Microbiome. Metagenomics	6	CO
1º	Gut Microbiota I. Intestinal Homeostasis	6	CO
1º	Gut Microbiota II. Intestinal Dysbiosis	6	CO
1º	Microbiota in Neonatology and Pediatrics	6	CO
1º	Oral Microbiota and Respiratory Tract	6	CO
1º	Microbiota and the Immune System	6	CO
1º	Skin Microbiota	6	CO
1º	Genitourinary Tract Microbiota	6	CO
1º	Relationship Between Intolerances/Allergies and Microbiota	6	CO
1º	Probiotics, Prebiotics, Microbiota and Health	6	CO

Dr. Pedro Navarro Illana
Dean

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

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Master's Degree
Human Microbiota

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Master's Degree
Human Microbiota

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