

# Postgraduate Diploma

## Diagnosis and Therapeutics of Acute Leukemia





## Postgraduate Diploma Diagnosis and Therapeutics of Acute Leukemia

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

Website: [www.techitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-diagnosis-therapeutics-acute-leukemia](http://www.techitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-diagnosis-therapeutics-acute-leukemia)

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# 01

# Introduction

As a result of the last decades of scientific research, the approach to acute leukemia has achieved important advances both in its detection and in the therapeutic strategies employed. From a better knowledge of molecular biology, the improvement of allogeneic transplants of hemopoietic progenitors to the creation of less aggressive drugs support the optimal prognosis of the patient. For this reason, TECH has created this degree that leads the medical professional to carry out an effective update through a program developed by experts of national and international stature in the field of Oncohematology. All this, moreover, in a 100% online teaching format and with innovative teaching resources available 24 hours a day, from any digital device with internet connection.



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*Get updated in Acute Leukemia  
through a Postgraduate Diploma  
100% online and flexible”*



The hard work carried out by the scientific community has led to a paradigm shift in relation to the prognosis and life expectancy of patients with leukemia. In this sense, from the progress in advanced Cart-T therapies to the approach of the main complications in people who present complications after allogeneic hemopoietic stem cell transplantation mark a milestone in the health field.

However, significant challenges remain in the field of detection and in the development of less aggressive and more precise drugs. In view of this reality, TECH has decided to develop this Postgraduate Diploma in Acute Leukemia Diagnostic Therapy, which offers the specialist an update in this area through an exhaustive syllabus prepared by an excellent teaching team made up of renowned experts in the world of Oncohematology.

It is a program that will take students over 6 months to deepen in allogeneic HSCT, the main postoperative problems and useful tools for their detection, the prevention of Cytomegalovirus or the most notorious advances in Acute Myeloid Leukemia. In addition, thanks to the innovative multimedia content, the graduate will delve dynamically through the results of different treatment alternatives in patients with relapsed or refractory ALL, such as blinatumumab, inotuzumab or CAR-Ts.

In this way, this academic institution offers hematology specialists an excellent academic option for updating their knowledge through a degree program characterized by its flexibility. All the student needs is a digital device with internet access (mobile phone, tablet, or computer) to view the course materials for this program. In this way, without classroom attendance, or classes with fixed schedules, this program offers a better balance to reconcile daily professional activities with a first class academic program.

This **Postgraduate Diploma in Diagnosis and Therapeutics of Acute Leukemia** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of practical cases studies presented by experts in Hematology and Hemotherapy
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where self-assessment can be used 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



*TECH has designed a university degree that adapts to your agenda and your needs to update your knowledge in Diagnosis and Therapeutics of Acute Leukemia"*

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*Incorporate into your clinical practice the diagnostic techniques focused on genetic alterations”*

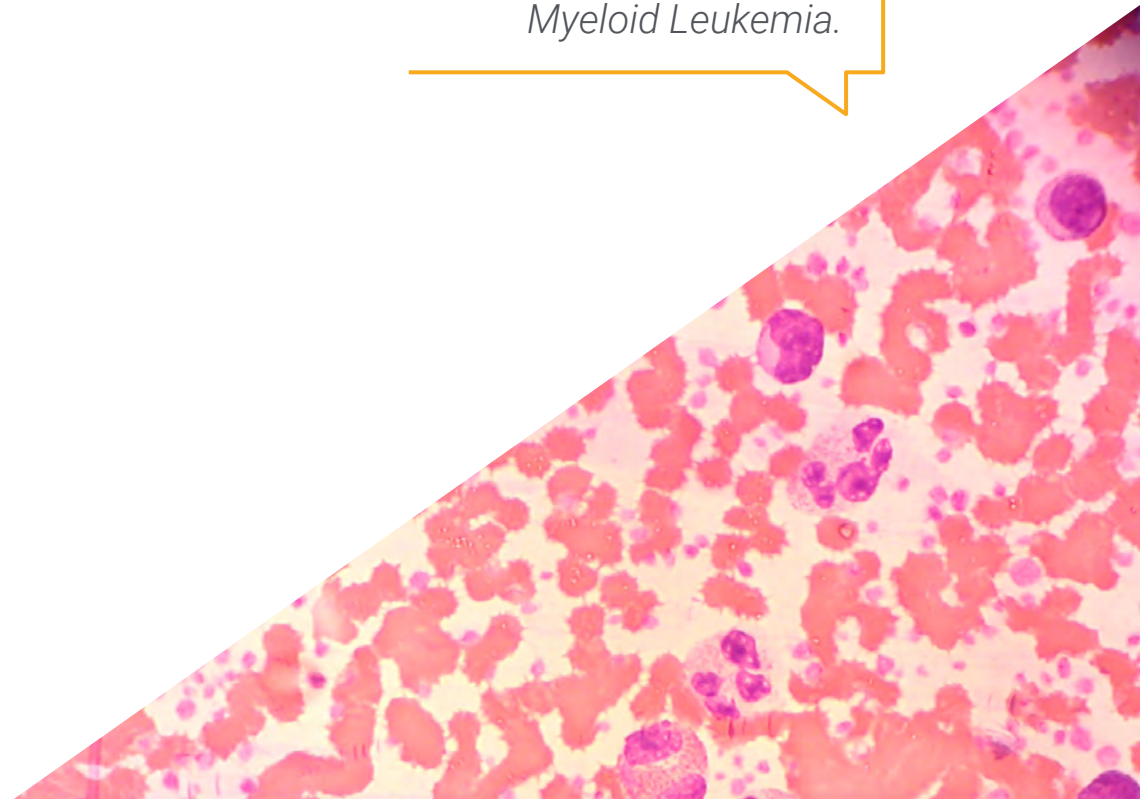
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

*Thanks to this degree you will delve into the most recent evidence to position HSCT in the different subgroups of patients with ALL.*

*A 6-month academic course that will allow you to be aware of the new therapeutic targets in Acute Myeloid Leukemia.*



# 02 Objectives

This Postgraduate Diploma has been designed with the aim of offering students a complete update on the most current scientific evidence regarding diagnostic techniques and treatments in patients with acute leukemia. In order to achieve this goal successfully, TECH provides a program with a theoretical-practical approach and of great application in daily practice. Thus, among the extensive didactic material, students will have at their disposal simulations of clinical cases that will allow them to integrate in their practice the most advanced processes for the approach of this disease.





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*You have clinical case studies that will allow you to delve into the accurate detection of Acute Lymphoblastic Leukemia with the most sophisticated techniques”*



## General Objectives

- Explore the etiopathogenesis, diagnosis, and prognosis of Myelodysplastic Syndromes
- Update knowledge on the pharmacological treatments used in Oncohematology
- Investigate the most recent scientific publications on the most appropriate treatments in LAL
- Delve into the growing problem of resistant microorganisms
- Evaluate current evidence and recommendations in prophylaxis
- Examine the routine care of oncohematology patients affected by SARS-CoV-2



*Enhance your skills in the management of long term survivors of Acute Leukemia with this program"*





## Specific Objectives

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### Module 1. Acute Myeloid Leukemia

- ♦ Delve into the most relevant updates in diagnostic and prognostic aspects, with a special emphasis on the current importance of genetic and molecular alterations
- ♦ Delve into the rational basis that justifies the changes in the latest WHO classification and its differences with the alternative classification of the paradoxically named International Consensus Group (ICC)
- ♦ Update knowledge on current recommendations for different subgroups, attempting to break down studies and various levels of evidence and recommendations for each case

### Module 2. Acute Lymphoblastic Leukemia

- ♦ Delve into the etiopathogenesis of acute lymphoblastic leukemias
- ♦ Highlight the importance of correct immunophenotypic typing by flow cytometry, as well as the prognostic value of genetic and molecular alterations in different subgroups of ALL
- ♦ Explore the role of minimal residual disease assessment by cytometry or molecular techniques
- ♦ Identify the current protocols of the Spanish cooperative group, their similarities or differences with the protocols of international reference groups, and understand the difficulty in establishing the advantage of each potential modification of such a complex treatment with so many variables included
- ♦ Evaluate the evidence to position HSCT in the different subgroups of patients with ALL
- ♦ Identify the outcomes of different treatment alternatives in patients with relapsed or refractory ALL, including bispecific antibodies like blinatumomab, antibody-drug conjugates like inotuzumab, or cell therapy with chimeric antigen receptor T cells (CAR-T)

### Module 3. Allogeneic Hematopoietic Progenitor Transplant

- ♦ Delve into the fundamental concepts of allogeneic hematopoietic progenitor transplantation with a practical approach
- ♦ Update knowledge on the most relevant complications of the procedure, its different modalities, and useful tools for diagnosing and prognosing some of them, such as GvHD or SOS
- ♦ Evaluate different approaches to prevent and treat Cytomegalovirus or fungal infections
- ♦ Identify the methodological limitations that frequently affect studies in the field of HSCT, particularly regarding its indications

03

# Structure and Content

Thanks to the effectiveness of the Relearning method, the graduate of this program will progress naturally through the course material, reducing long study hours. In this way, they will achieve a comprehensive update in the Diagnosis and Therapeutics of Acute Leukemia in just 6 months. Additionally, thanks to the extensive Virtual Library, they will be able to expand on the information provided by the excellent team of specialists who make up this program.







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*A comprehensive study plan with numerous additional materials, accessible at any time of the day from your computer with internet access”*



## Module 1. Acute Myeloid Leukemia

- 1.1. Clinical Features
  - 1.1.1. Introduction and Epidemiology
  - 1.1.2. Clinical Manifestations
  - 1.1.3. Analytical Alterations
- 1.2. Diagnosis
  - 1.2.1. Pathogenesis
  - 1.2.2. Cytology
  - 1.2.3. Flow Cytometry
- 1.3. Genetic and Molecular Alterations. Classifications and Prognosis
  - 1.3.1. Cytogenetics
  - 1.3.2. Molecular Biology
  - 1.3.3. WHO vs ICC
  - 1.3.4. Risk According to ELN
- 1.4. Acute Promyelocytic Leukemia
  - 1.4.1. Diagnosis
  - 1.4.2. Prognosis
  - 1.4.3. Treatment
- 1.5. Intensive Treatment of AML
  - 1.5.1. Intensive Induction Chemotherapy
  - 1.5.2. Alternatives and Modifications to 3+7
  - 1.5.3. Post-Remission Treatment
- 1.6. Other Available Treatments in AML
  - 1.6.1. Gemtuzumab Ozogamicin
  - 1.6.2. Liposomal Daunorubicin + Cytarabine
- 1.7. Less Intensive Treatments
  - 1.7.1. Hypomethylating Agents
  - 1.7.2. Venetoclax
  - 1.7.3. Other Targeted Treatments
- 1.8. New Drugs in Development
  - 1.8.1. Promising New Targets
  - 1.8.2. Cell Therapy

- 1.9. Hematopoietic Stem Cell Transplantation (HSCT) in AML
  - 1.9.1. Possible Indications for Autologous and Allogeneic Transplants
  - 1.9.2. Allogeneic HSCT Conditioning in AML
  - 1.9.3. Donor Lymphocyte Infusions
  - 1.9.4. Second HSCT in AML
- 1.10. Long-Term Survivor Management
  - 1.10.1. Follow-Up Recommendations
  - 1.10.2. Late Relapses
  - 1.10.3. Second Neoplasms and Other Complications

## Module 2. Acute Lymphoblastic Leukemia

- 2.1. Epidemiology and Pathogenesis
  - 2.1.1. Epidemiology
  - 2.1.2. Pathogenesis
  - 2.1.3. Clinical Features
- 2.2. Diagnosis
  - 2.2.1. Cytology and Flow Cytometry
  - 2.2.2. Cytogenetics and Molecular Biology
  - 2.2.3. WHO Classification
- 2.3. Adolescents and Young Adults
  - 2.3.1. Pediatric Protocols
  - 2.3.2. Management in Adult vs. Pediatric Units
- 2.4. Prognosis
  - 2.4.1. Poor Prognosis Factors
  - 2.4.2. Risk Stratification
  - 2.4.3. Role of Minimal Residual Disease
- 2.5. Induction Treatment
  - 2.5.1. Role of vinca alkaloids, anthracyclines and steroids
  - 2.5.2. Role of Asparaginase and its Varieties
  - 2.5.3. CNS prophylaxis

- 2.6. Post-Remission Treatment
  - 2.6.1. Concept of CR and MRD
  - 2.6.2. Consolidations: Management of High-Dose MTX
  - 2.6.3. Consolidations: Role of Ara C and Reinduction
  - 2.6.4. Maintenance
- 2.7. Allogeneic HSCT in 1st Line ALL
  - 2.7.1. Limited Evidence Level
  - 2.7.2. UK/ECOG study
  - 2.7.3. Importance of Eliminating MRD Pre-HSCT
- 2.8. Treatment in Relapse/Refractory Cases
  - 2.8.1. Rescue Chemotherapy
  - 2.8.2. Bispecific or Conjugated Antibodies
  - 2.8.3. Cell Therapy, CAR T
- 2.9. Ph+ ALL
  - 2.9.1. Pathogenesis and Diagnosis
  - 2.9.2. Treatment Protocols Including TKIs
  - 2.9.3. Role of HSCT and Bispecific or Conjugated Antibodies
  - 2.9.4. Ph+ ALL-like
- 2.10. T-cell ALL
  - 2.10.1. Epidemiology and Pathogenesis
  - 2.10.2. Diagnosis and Prognosis
  - 2.10.3. Treatment

### Module 3. Allogeneic Hematopoietic Progenitor Transplant

- 3.1. Types of Hematopoietic Stem Cell Transplant (HSCT)
  - 3.1.1. HSCT from HLA-Identical Sibling
  - 3.1.2. HSCT from Unrelated Donor (UD)
  - 3.1.3. Haploidentical HSCT
- 3.2. Pre-Transplant Evaluation
  - 3.2.1. Tests to Be Performed
  - 3.2.2. Fertility Preservation
  - 3.2.3. Risk Assessment for HSCT

- 3.3. Selection of the Ideal Donor
  - 3.3.1. Age. Possible Human Leukocyte Antigen (HLA) Differences
  - 3.3.2. CMV Status. Group/Rh Compatibility
  - 3.3.3. Comorbidities. Logistical Issues
- 3.4. Some Early Complications of HSCT
  - 3.4.1. Cytopenias, Bleeding, Infections
  - 3.4.2. Thrombotic Microangiopathy
  - 3.4.3. Mucositis. Diarrhea
- 3.5. Other Possible Complications of HSCT
  - 3.5.1. Graft Failure
  - 3.5.2. Graft Syndrome
- 3.6. Sinusoidal Obstruction Syndrome
  - 3.6.1. Etiopathogenesis and Diagnosis
  - 3.6.2. Prognosis and Treatment
- 3.7. Acute Graft-Versus-Host Disease (aGVHD)
  - 3.7.1. Acute aGVHD: Pathogenesis and Clinical Features
  - 3.7.2. Prophylaxis of aGVHD
  - 3.7.3. Acute aGVHD: Diagnosis and Grading
- 3.8. Treatment of Acute aGVHD
  - 3.8.1. Steroid Management
  - 3.8.2. Options after Steroid Failure
- 3.9. Chronic Graft-Versus-Host Disease (cGVHD)
  - 3.9.1. cGVHD: Pathogenesis and Clinical Features
  - 3.9.2. cGVHD: Diagnosis and NIH Severity Grading
- 3.10. Treatment of Chronic cGVHD
  - 3.10.1. Localized Treatments
  - 3.10.2. Systemic Treatment Options for Steroid-Refractory Cases

# 04 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.





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*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.

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*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.

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*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.

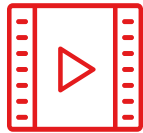
The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*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

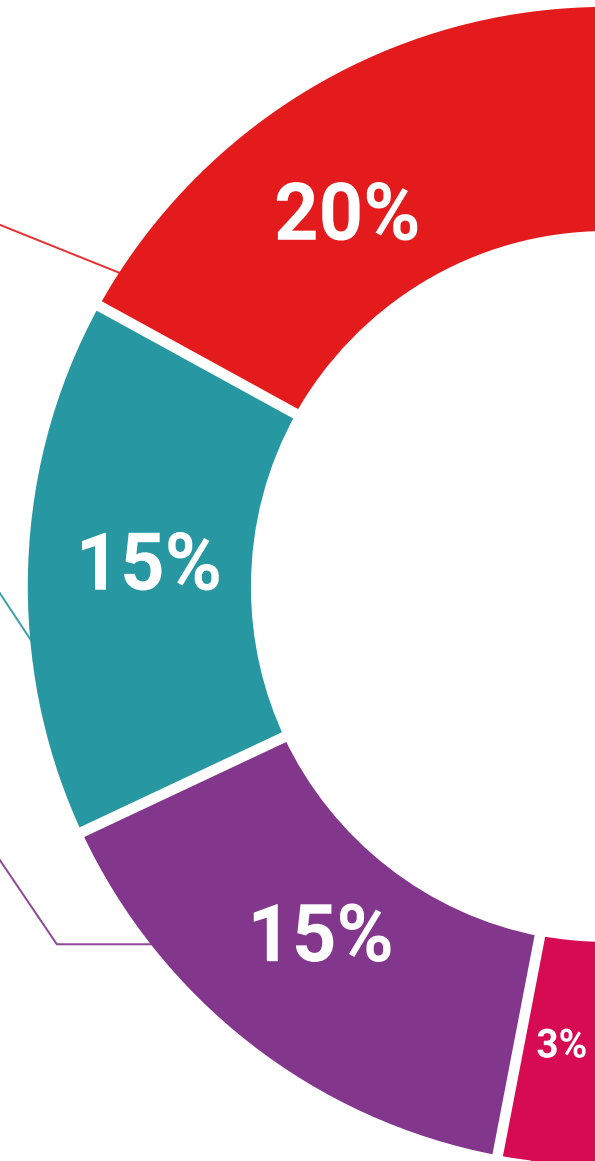
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

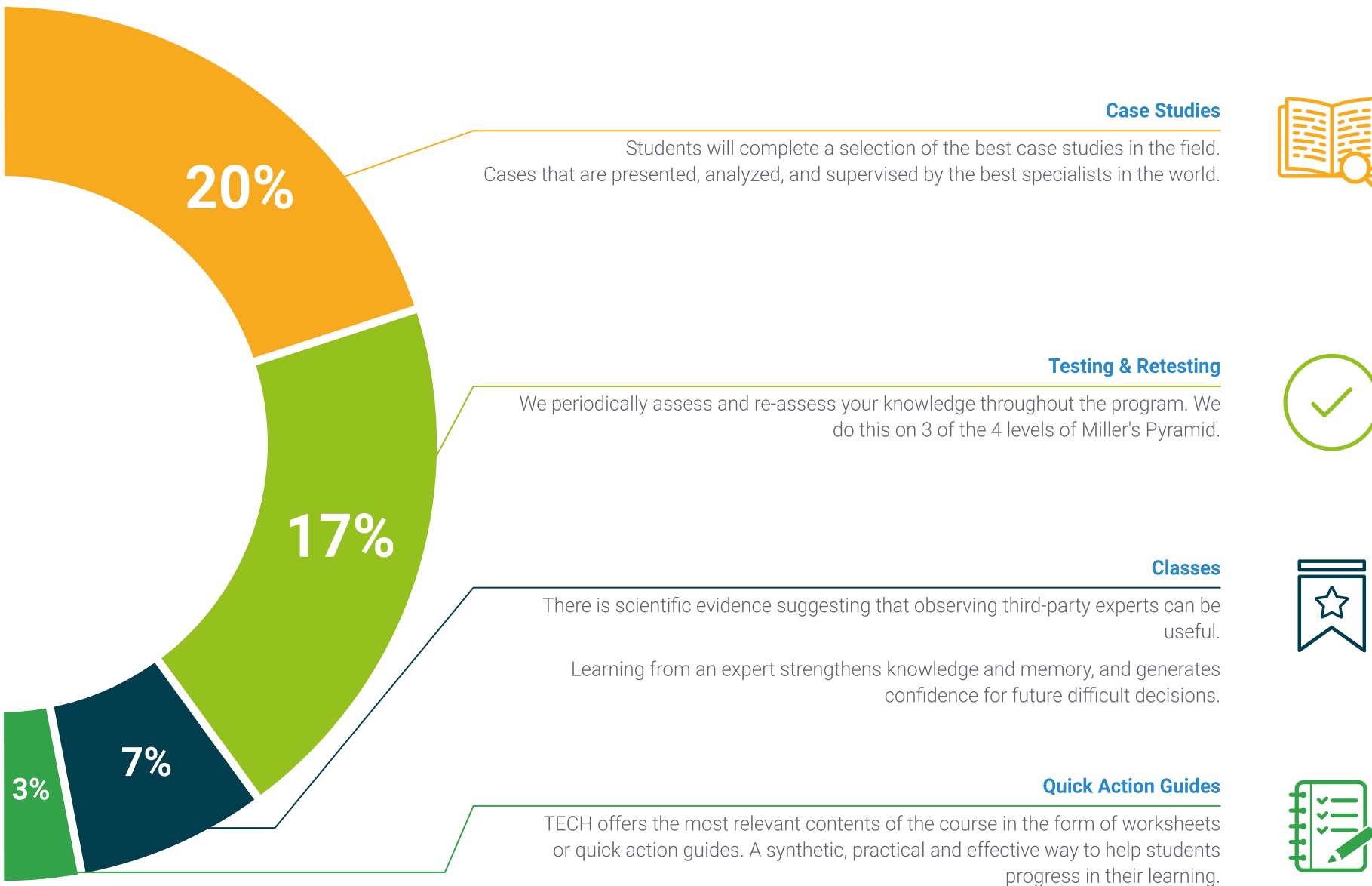
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

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







# 05 Certificate

This Postgraduate Diploma in Diagnosis and Therapeutics of Acute Leukemia guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Diploma issued by TECH Global University.



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*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 **Postgraduate Diploma in Diagnosis and Therapeutics of Acute Leukemia** 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: **Postgraduate Diploma in Diagnosis and Therapeutics of Acute Leukemia**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





**Postgraduate Diploma**  
Diagnosis and Therapeutics  
of Acute Leukemia

- » Modality: online
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## Diagnosis and Therapeutics of Acute Leukemia

