Advanced Master's Degree
Comprehensive Medical Oncology

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Advanced Master's Degree
Comprehensive
Medical Oncology

- » Modality: **online**
- » Duration: **2 years**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/pk/medicine/advanced-master-degree/advanced-master-degree-comprehensive-medical-oncology**

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01
Introduction

Comprehensive Medical Oncology is a medical specialty in constant evolution due to scientific advances, clinical challenges and the growing demand for comprehensive and multidisciplinary care in cancer management. For medical professionals and specialists dedicated to this area, it is crucial to keep up to date with the latest developments and treatment approaches. This is where the present program plays a fundamental role, delving into the most important novelties in the area. Thus, the specialist will delve into the latest treatments and diagnostic methodology around cancer, all in a 100% online format that allows you to combine it with your responsibilities

SIGNA
PET/MR

Update yourself with the latest advances in Comprehensive Medical Oncology and expand your knowledge in cancer molecular biology, cutting-edge therapies and precision medicine"

The field of Comprehensive Medical Oncology is a constantly evolving specialty due to scientific advances, clinical challenges and the growing demand for comprehensive and multidisciplinary care in cancer management. Medical professionals and specialists dedicated to this specialty face a series of specific novelties and challenges that require constant updating.

Given this context, TECH has created the Advanced Master's Degree in Comprehensive Medical Oncology, which offers an advanced and comprehensive update for those physicians and specialists interested in staying current in this constantly evolving specialty. This program provides a wide range of knowledge and skills necessary to address current clinical and scientific challenges in the field of Comprehensive Medical Oncology

The rationale for participating in this program lies in the need to stay current in the constantly evolving field of Comprehensive Medical Oncology. Advances in the molecular understanding of cancer, the development of new therapies and treatment approaches, as well as the growing importance of comprehensive and multidisciplinary care in cancer management make it essential to have an updated and complete instruction in this specialty.

The Advanced Master's Degree in Comprehensive Medical Oncology offers a wide range of topics, including the molecular biology of cancer, advances in diagnosis and treatment, genomic data mining techniques, psycho-oncological care, radiotherapy and psychological treatments in cancer and third generation therapies. Participants will have the opportunity to update their knowledge and gain a comprehensive, multidisciplinary perspective on cancer management.

An outstanding advantage of this program is that it is taught 100% online, which allows participants to access the Virtual Campus from anywhere and at any time, adapting to their schedules and professional responsibilities. In addition, the program uses innovative educational methodologies, such as clinical simulations and case discussions, which allow participants to practically apply the knowledge acquired and strengthen their clinical skills.

This **Advanced Master's Degree in Comprehensive Medical Oncology** 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 oncology
- 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
- Its special emphasis on innovative methodologies in cancer management
- 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

Delve into multidisciplinary approaches to comprehensive cancer management, addressing clinical, psycho-oncological and side effect management aspects"

Expand your knowledge in specific cancers such as breast, lung, ENT, colorectal, gynecological, urological, sarcoma, melanoma and brain cancers.

"
Delve into the latest techniques in the genomic era, use of Unix and Linux in bioinformatics, data analysis in Big Data projects with R for an updated and cutting-edge clinical practice"
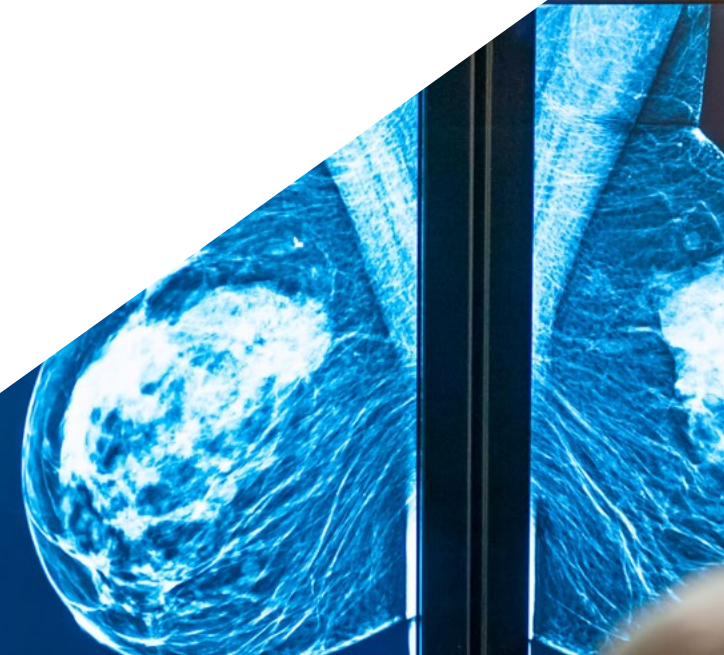
Analyze assessment and measurement instruments in psycho-oncology, communication with the oncology patient and bereavement management.

Includes in its teaching staff professionals belonging to the oncology field, who pour into this program the experience of their work, in addition to recognized specialists from reference 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 an immersive learning experience designed to prepare 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
Objectives

The Advanced Master's Degree in Comprehensive Medical Oncology has as its main objectives to provide health professionals with an advanced update in the different aspects of medical oncology, to promote the acquisition of clinical and research skills in the integrated management of cancer and to foster a holistic and compassionate vision in oncological care.

Develop clinical and research skills in the integral management of cancer, with a holistic approach that seeks to contribute to the scientific advancement in the field of cancer"

General Objectives

- Be able to accurately interpret the volume of clinical information currently available and associated with the biological data generated after a bioinformatic analysis
- Learn how to perform a good assessment of the cancer patient, starting with the epidemiology, diagnosis and staging of the most frequent tumors
- Delve into the complementary studies that help us in the diagnosis and decision making of the main neoplasms
- Become familiar with the main genetic syndromes that predispose to the development of this disease
- Recognize and manage the main breast, lung, digestive, urological, gynecological and mesenchymal tumors

Specific Objectives

Module 1. Molecular Biology

- Update knowledge on the molecular biology of cancer, in relation to different concepts such as genetic heterogeneity or microenvironment reprogramming
- Provide and expand knowledge on immunotherapy as an example of a clear scientific advance in translational research
- Learn about a new approach to the classification of the most frequent tumors based on genomic data available in The Cancer Genome Atlas (TCGA) Research Network

Module 2. Genomic or precision oncology

- Discuss the change in the current landscape with the introduction of genomic data into the biological understanding of tumors
- Explain how genomic classification provides independent information to predict clinical outcomes, and will give the biological basis for an era of personalized cancer treatment
- Learn the new genomic technologies currently used in DNA and RNA sequencing, based on the human genome sequence and made possible since the completion of the Human Genome Project, which has represented an unprecedented expansion of the capabilities of molecular genetics in genetic and clinical diagnostic research
- Discuss the bioinformatics process followed for the interpretation and application of biological data
- Analyze and interpret biological information at the molecular, cellular and genomic levels

Module 3. Changes in the Current Clinical Practice and New Applications with Genomic Oncology

- Discuss and know how to interpret tumor mutational burden (TMB) as a genomic biomarker that has a significant impact on the landscape of cancer immunotherapy
- Learn how liquid biopsy of circulating DNA allows us to understand specifically what kind of molecular changes are happening in the tumor in real time
- Describe the current paradigm for incorporating genomic data into current clinical practice

Module 4. Use of Unix and Linux in Bioinformatics

- Learn about the Linux operating system, which is currently essential in the scientific world both for the interpretation of biological data from sequencing and it also should be for medical text mining when handling large-scale data
- Provide the basics of accessing a Linux server and how to find and install packages to install software locally
- Describe basic Linux commands for: creating, renaming, moving, and deleting directories; listing, reading, creating, editing, copying, and deleting files
- Understand how permissions work and how to decrypt the most cryptic Linux permissions easily

Module 5. Data analysis in Big Data projects: R programming language

- Discuss how the adoption of next-generation sequencing (NGS) in a diagnostic context raises numerous questions regarding the identification and reporting of variants in secondary genes for patient pathology
- Get started in the R programming language, which has the advantages of being an open-source programming language and has multiple statistical analysis packages available
- Learn basic R programming concepts such as data types, vector arithmetic and indexing
- Performing operations in R, including sorting, creating or importing data

- Learn how problem solving begins with a modular decomposition and then further decompositions of each module in a process called successive refinement
- Learn the basics of statistical inference to understand and calculate p-values and confidence intervals while analyzing data with R
- Provide examples of R programming in a way that will help make the connection between concepts and their implementation

Module 6. Graphical Environment in R

- Using visualization techniques to explore new datasets and determine the most appropriate approach
- Learn how to visualize data to extract information, better understand data and make more effective decisions
- Teach how to take data that at first glance has little meaning and visually present that data in a form that makes sense for analysis
- Learn how to use the three main graph sources in R: base, lattice and ggplot2
- Know what each graphics package is based on in order to define which one to use and the advantages offered by one or the other

Module 7. Statistical analysis in R

- Describe the most appropriate statistical techniques as an alternative when data do not conform to the assumptions required by the standard approach
- Learn the basics of conducting reproducible research by using R scripts to analyze data

Module 8. Machine Learning for Analysing Big Data

- Rapidly and automatically process and analyze enormous volumes of complex structured, semi-structured and unstructured data in big data
- Understand what machine learning is and to use some of the techniques for data classification (decision tree, k-NN, Support Vector Machines, neural networks, etc.)
- Learn how to divide data into a test set and a training set and discover the concepts of bias and variance

Module 9. Data Mining Applied to Genomics

- Learn how data mining allows us to find patterns and regularities in databases
- Learn to apply the principles of data mining to the analysis of large complex datasets (Big Data), including those in very large databases or on web pages
- Explore, analyze and leverage data and convert it into useful and valuable information for clinical practice

Module 10. Techniques for extracting genomic data

- Understand how most scientific data appear in documents such as web pages and PDF files that are difficult to process for further analysis, however, using scraping techniques they can be used to
- Access to many data sources through the web for the implementation of precision medicine by allowing massive extraction of information

Module 11. New techniques in the age of genomics

- Put into practice the knowledge acquired for the interpretation of a genomic study in several cancer cases by extracting useful information that will help in decision making
- Using several algorithms performed with the R language for the extraction of knowledge from Pubmed, DGIdb and Clinical Trials databases based on the search for genetic information in certain tumors

Module 12. Application of Bioinformatics in Genomic Oncology

- Understanding the function of genes with little clinical information based on ontological proximity
- Discover genes involved in a disease based on a massive Pubmed search and graphical representation of the level of scientific evidence

Module 13. Breast Cancer

- Perform a detailed diagnosis, with adequate staging of breast cancer
- Know the basics of early diagnosis of breast cancer, the target ages and differentiate screening for low, intermediate or high risk patients
- Distinguish the main subtypes of breast cancer, to know the predictive and prognostic factors that help to determine the best treatment, both in early and advanced disease
- Become familiar with the different genetic platforms, which help to decide which patients benefit and which do not benefit from adjuvant chemotherapy treatment
- Determine which treatment is most appropriate for each patient, based on disease subtype and stage of disease
- Know each of the available treatments for advanced disease, as well as the main toxicities derived from it, highlighting cyclin inhibitors (cdk4/6) and immunotherapy
- Understanding the disease and having clear ideas regarding the management of patients with advanced luminal, triple negative and HER 2 positive disease. Knowing which treatment should be chosen in each of the situations, both first line and successive

Module 14. Lung Cancer

- Perform an adequate diagnosis and staging of lung cancer, knowing the main diagnostic tests to be performed
- Understand the different stages of lung cancer and to apply the best treatment in each one of them
- Learn about the main studies aimed at lung cancer screening and the target population
- Be able to identify the histological subtypes of lung cancer. Differentiate between large cells and small cells
- Identify the main driver mutations (EGFR, ALK and ROS 1), as well as the role of PDL1. Targeted therapies, both tyrosine kinase inhibitors and immunotherapy. Main indications and toxicity

Module 15. ORL tumours
- Manage the diagnosis and staging of the main ENT tumors
- Learn the most appropriate treatments according to tumor staging and location
- Have an in-depth knowledge of the treatments for metastatic disease, highlighting the most innovative ones, such as immunotherapy

Module 16. Colorectal cancer and anal canal
- Perform an adequate diagnosis and staging of Colorectal Cancer
- Deepen in the indications for Colorectal Cancer screening and the main genetic syndromes that predispose to this disease
- Recognize in depth the different stages of Colon Cancer
- Point out the role of EGFR and the main prognostic factors of Colorectal Cancer
- Understand the most appropriate treatments both in the first line and in successive treatments
- Identify the role of immunotherapy in this setting
- Understand the role of neoadjuvant chemotherapy and the possibility of surgical salvage in colorectal cancer
- Become familiar with anal canal cancer and its main treatments

Module 17. Non-colorectal digestive tumors
- Have an in-depth knowledge of the diagnosis and staging of pancreatic tumors
- Learn how to choose which type of treatment is indicated in each situation
- Be familiar with the main treatments available for metastatic pancreatic cancer, both for first line and successive treatments
- Have an in-depth knowledge of the diagnosis and staging of esophageal and gastric tumors, knowing the main treatments depending on the stage of the tumor

- Guiding the diagnosis and knowing the peculiarities of neuroendocrine tumors, knowing how to differentiate between secretory and non-secretory tumors. And know in depth the available treatments for this entity, highlighting the role of radionuclides
- Be familiar with the tests performed in the diagnosis of biliary tract tumors, staging and treatment

Module 18. Gynecologic Tumors
- Learn in depth about the different gynecological tumors
- Be aware of the role of BRCA in ovarian cancer and its therapeutic implications
- Know how to differentiate a platinum-sensitive patient from a non-platinum-sensitive patient
- Be familiar with the indications of PARP inhibitors

Module 19. Urological tumors
- Be able to treat urological tumors in each of their stages. Emphasizing the treatment with tyrosine kinase inhibitors and immunotherapy in renal cancer
- Know the BRAF mutation and its therapeutic implications
- Deepen in the treatment of melanoma in advanced stages
- Master the indications of immunotherapy and the combination of BRAF and MEK inhibitors

Module 20. Sarcomas and melanomas
- Understand the different types of mesenchymal tumors, both soft tissue sarcoma, bone sarcoma and the peculiarities of GIST tumor
- Learn the indications of adjuvant treatment for each one of them
- Know the first line and successive treatments, both in soft tissue and bone sarcomas and GIST

Module 21. Brain Tumors
- Learn about the role of immunotherapy in brain tumors
- Have an in-depth knowledge of the main brain tumors
- Distinguish them according to the molecular pattern
- Understand the most important prognostic factors

Module 22. Radiotherapy

- Understand the basics of radiotherapy treatment
- Learn the volumes to be treated and their names
- Determine the fundamental role of radiotherapy treatment in oncology
- Be familiar with the indications for radiotherapy treatment in breast cancer, lung cancer, ENT tumors, prostate cancer and digestive tumors
- Become familiar with the role of radiotherapy in less common tumors

Module 23. Characterization and Fields of Application of Psycho-Oncology

- Provide the necessary clinical knowledge of oncological disorders, epidemiology, etiology, risk factors, processes and diagnostic tests
- Train in the design and implementation of health promotion and cancer prevention and early detection programs
- Be able to argue about the area of study and the profession
- Identify the social needs of people with cancer and their families
- Analyze the influence of the perceived social support in cancer

Module 24. Psychological Treatments in Cancer and Third Generation Therapies

- Determine realistic treatment objectives together with the patient and/or their family
- Undergo training in the methods of intervention with cancer patients, especially empirically supported treatment techniques
- Identify those somatic symptoms and/or psychological alterations that are perceived by the patient as a threat
- Detect and enhance, as far as possible, the patient's own resources

Module 25. Most Relevant Psychological Aspects According to Different Tumor Locations

- Identify those somatic symptoms and/or psychological alterations that are perceived by the patient as a threat
- Compensate for, eliminate or attenuate such symptoms, symptom control
- Detect and enhance, as far as possible, the patient's own resources
- Facilitating adaptation to the disease during the biomedical treatment process (affecting anxiety, anguish, side effects of chemotherapy, phobias of radiotherapy devices, sexual dysfunctions and also hospital admissions)
- Encourage active coping styles
- Facilitate therapeutic adherence to medical treatment

Module 26. Protocols for Emotional Intervention at the End of Life

- Perform preventive care actions for the family according to the stages of the disease
- Address conflicts that may arise as a result of different socio-cultural beliefs and values between the team and the patient-family binomial
- Recognize and respond to spiritual distress and know how to refer the patient to the appropriate professional
- Develop appropriate assessments of the overall importance of the patient's spiritual beliefs and religious practices
- Manage the attitudes and responses of patients, caregivers and professionals derived from the professional-patient relationship
- Know how to intervene in particularly complex family situations
- Be able to work in cooperative groups and multi-professional teams

Module 27. Evaluation and Measurement Instruments

- Evaluate the complex psychological problems
- Apply assessment procedures and instruments for specific symptoms
- Acquire the training and practice to conduct quality of life assessment; plan the assessment and use specific instruments, conduct functional analysis, case formulation and reporting
- Assess family threats, needs and resources, and know how to apply family assessment tools
- Manage comprehensive assessment tools in palliative and end-of-life care

Module 28. Communication with the Oncologic Patient

- Work with a Patient-Centered Psychology
- Appropriately handle difficult situations and dealing with bad news
- Prevent and detect communication problems (e.g., pact of silence) and enhance family members' resources and strategies
- Manage the most complex communication difficulties
- Reflect critically on one's own attitudes and communication skills, identifying elements for continuous improvement during the care process

Module 29. Grief Management

- Prevent the onset of complicated grief prior to death as much as possible
- Continue to prevent the onset of complicated grief after the death, providing emotional support and the tools that help the person to say goodbye to their loved one
- Provide guidance in carrying out bereavement tasks
- Develop the capacity for empathy, listening and compassion that allows us to be in tune with the patient's pain, without over-involvement and, at the same time, create a sufficiently strong therapeutic bond in the face of difficulties that may arise in the process

Module 30. Other Psychological Interventions in Specific Cancer-Related Areas

- Perform in-depth management of the combined protocol for the smoking withdrawal process and relapse prevention
- Perfect the skills and competencies necessary for the selection, training and supervision of volunteers
- Detect the psychological factors associated with participation in cancer *screening* and genetic counseling programs, as well as to encourage participation in them by increasing the perception of control
- Analyze the use and some of the advantages of group therapy compared to individual treatment
- Gain in-depth knowledge of psychological preparation programs for the different medical oncological treatments and their side effects
- Be able to identify and mitigate the sequelae that remain in cancer survivors

Module 31. Research in Cancer
- Design, develop and implement a research project
- Formulate scientific research hypotheses
- Analyze results and draw conclusions
- Train in scientific communication of research results
- Establish the ethical limitations of a research project
- Have the ability to apply empirical evidence in patient care
- Gain knowledge of good clinical practice guidelines and ethics committee standards

Module 32. Ethical Aspects in Psycho-Oncology and Psychology of Palliative Care
- Analyze ethical dilemmas in depth and from an interdisciplinary perspective
- Identify bioethical problems in the conduct of professionals, in health care activities or in biomedical research
- Argue decisions in the biomedical field with well-founded ethical value judgments
- Develop expressive and communicative skills on bioethical issues in order to be able to interact in an ethics committee environment

Learn from experts in medical oncology and expand your knowledge in specific areas such as third-generation therapies and communication with the oncology patient"

03
Skills

Throughout the program, specialists will develop clinical, investigative and emotional competencies in order to effectively face the current challenges in the field of oncology. Participants will acquire skills in the use of precision therapies, analysis of genomic data, management of psychological and ethical issues, communication with the oncology patient, as well as in the application of research and evaluation techniques.

"

Acquire advanced clinical competencies in the comprehensive management of cancer, including the application of precision therapies and the analysis of genomic data for informed clinical decision making"

General Skills

- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context

- Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study

- Integrate knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments

- Communicate its conclusions - and the ultimate knowledge and rationale behind them - to specialized and non-specialized audiences in a clear and unambiguous manner

- Acquire the learning skills that will enable further studying in a largely self-directed or autonomous manner

- Manage the different therapeutic options, as well as the treatment schedule for each of the neoplasms

- Know the latest advances in the treatment of these diseases, both from the point of view of medical oncology and radiation oncology

- Identify the most innovative treatments

- Perform assessment and diagnosis to start treatment in cancer patients

- Know the area of study and the profession for a better understanding of the disease

- Use information and communication technologies to keep abreast of new developments in the disease

- Improve skills in searching, processing and analyzing information from various sources

- Make decisions under stress
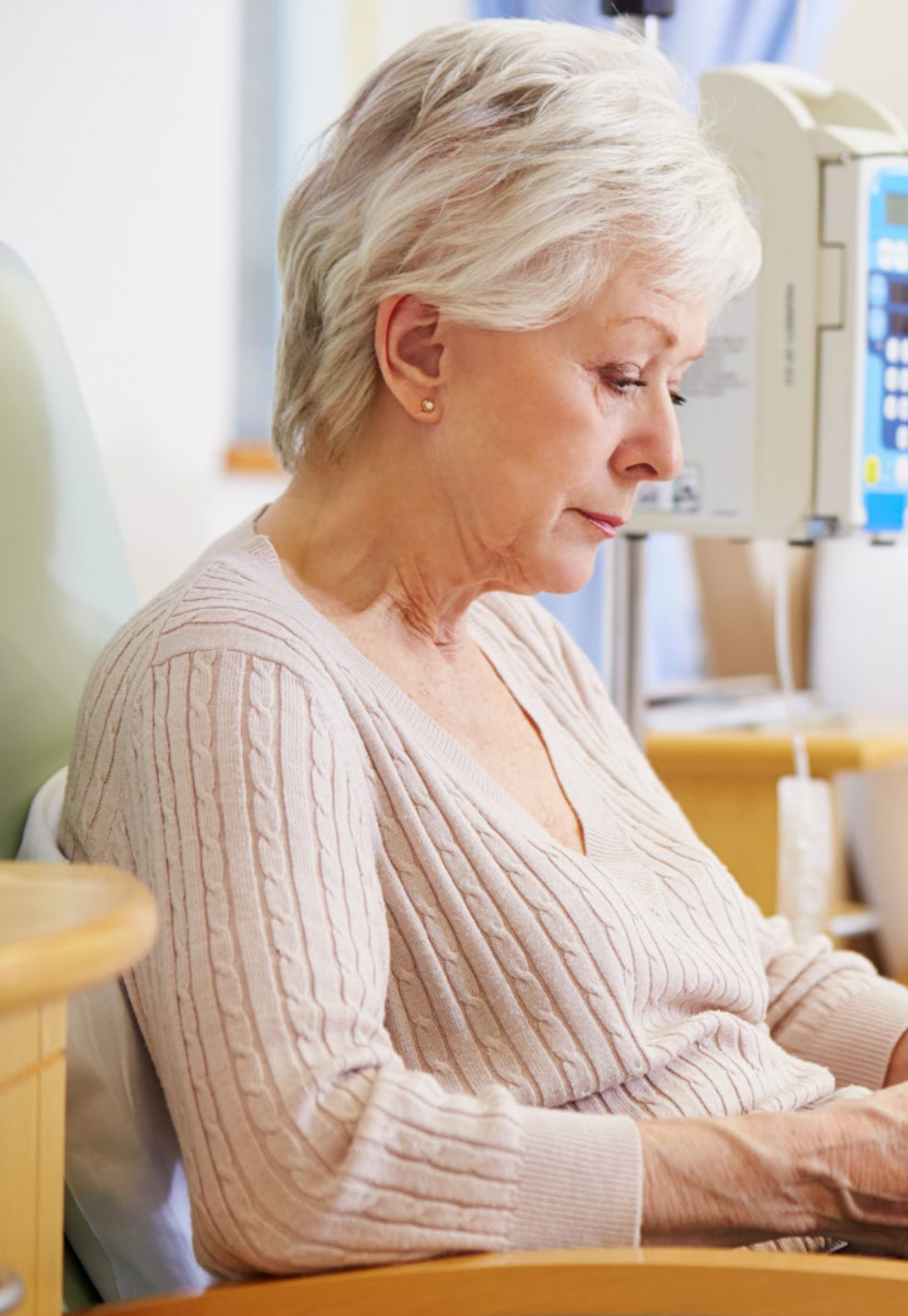
Specific Skills

- Create a global and updated vision of the exposed topics that will allow the student to acquire useful knowledge and at the same time, generate interest in expanding the information and discovering its application in their daily practice

- Understand the knowledge discovery process, including data selection, cleaning, coding, the use of different statistical and machine learning techniques and the visualization of the generated structures

- Understand how to evaluate the performance of supervised and unsupervised learning algorithms

- Learn how functions normally return only one value to the program unit, unlike procedures that can return zero, one or several values

- Learn the biological databases that have emerged in response to the enormous amount of data generated by DNA sequencing technologies. Data stored in biological databases are organized for optimal analysis and are characterized by being complex, heterogeneous, dynamic and yet inconsistent due to the lack of standards at the ontological level

- Understand the role of radiotherapy as palliation in cancer patients

- Be fully aware of the treatment of low grade and high grade tumors and their differences

- Perfectly understand the role of surgery and sentinel node in the treatment of melanoma, as well as the indications for adjuvant treatment

- Know the diagnosis, prognosis, staging and main risk factors of melanoma

- Learn in depth about the treatment of uterine cancers (both endometrial and cervical cancers and sarcomas), in early and advanced stages

- Understand the different types of urological tumors, the diagnosis, peculiarities and staging of each one of them

- Be familiar with the tests necessary for the diagnosis and staging of ovarian cancer
- Be a specialist in the treatment of ovarian cancer, tubal tumors and primary peritoneal carcinoma in each of its phases
- Know the first line and successive treatments
- Be familiar with the most innovative treatments for each of the different digestive tumors
- Learn the procedure and the main diagnostic tests to be performed in the case of hepatocarcinoma. As well as the most appropriate treatments, including the role of immunotherapy and newer therapies
- Know in which cases adjuvant chemotherapy is indicated, and in which cases it is not. And which treatment is applied in each case
- Learn about the particularities of rectal cancer and its treatment in localized disease
- Develop students' empathic skills in dealing with terminally ill patients
- Identify the patients' strengths in order to motivate them to continue with treatment
- Help facilitate the patient's adaptation to his new reality, before, during and after treatment
- Develop plans to help families and patients cope with grief
- Know how to identify between maladaptive emotions and behaviors to prevent patients from self-injury

- Work on self-care to avoid job stress
- Develop coping plans when faced with the news of a terminal illness
- Improve communication skills to have assertive discussions with the patient's family members
- Help the different professionals involved in the patient's treatment to communicate with the family

" *Delve into the use of bioinformatics tools and data analysis techniques for the interpretation of genomic information and the application of bioinformatics in genomic oncology"*

04
Course Management

The teaching staff of the Advanced Master's Degree in Comprehensive Medical Oncology is made up of renowned specialists in the main areas of this specialty. The teachers are experts in the field, with extensive clinical and research experience, which guarantees quality and updated teaching. Participants will have the opportunity to have access to the clinical practice of the professors, analyzing practical cases from their own experience.

The teachers are based on the latest scientific evidence and the best clinical practices, which guarantees a teaching adapted to the most demanding oncological reality"

Management

Dr. Oruezábal Moreno, Mauro Javier

- Head of the Medical Oncology Department at the University Hospital Rey Juan Carlos, Madrid
- PhD in Medicine from the Complutense University of Madrid (UCM)
- Master's Degree in Bioinformatics and Biostatistics, Universitat Oberta de Catalunya (UOC)
- Master's Degree in Bioinformatics Analysis from the Pablo de Olavide University
- Research Fellow at University of Southampton
- Graduate in Medicine and Surgery from the Universidad de Navarra
- Member of: Spanish Society of Medical Oncology, the Spanish Group of Digestive Tumors (TTD)

D. Krallinger, Martin

- Head of Text Mining at the *BarcelonaSupercomputing Center*(BSC)
- Former Head of the Text Mining Unit at the Spanish National Cancer Research Center (CNIO)
- Researcher with more than 70 publications
- Participation in the development of the first biomedical text annotation metaserver (biocreative metaserver-BCMS) and the BeCalm metaserver
- Organizer of BioCreative community evaluation challenges for the evaluation of natural language processing tools and has participated in the organization of biomedical text mining tasks in various international community challenges, including IberEval and CLEF

Dr. Olier Gárate, Clara

- Medical Oncology specialist at the University Hospital Fundación Alcorcón
- Physician via MIR for specialization in Oncology at the University Clinic of Navarra
- Specialist in the area of breast cancer, CNS, melanoma, sarcoma, and genetic counseling
- Degree in Medicine from the University of Navarra
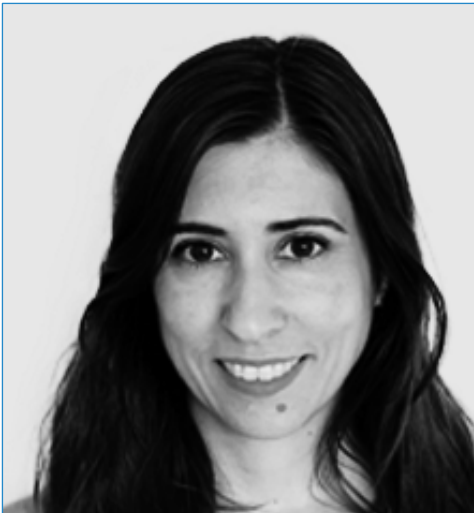
Dr. Moreno Muñoz, Diana

- Medical Oncology specialist at the University Hospital Fundación Alcorcón
- PhD in the Biomedicine Program at the University of Cordoba

Mr. Garrido Jiménez, Sergio

- Director of the Psychosocial Care Team at the Spanish Association Against Cancer in Jaen
- Psycho-oncologist in the Medical Oncology Unit at the Jaén Hospital Complex
- Psycho-oncologist in the Oncohematology Unit at the Doctor Sagaz University Hospital
- Psychologist in the Pain Unit at the San Agustín University Hospital
- Psychologist in the Palliative Care Unit at the Hospital San Juan de la Cruz
- Psychologist in the Home Care Unit at the Alto Guadalquivir Hospital
- General Health Psychologist for the Junta de Andalucía
- Master's Degree in Psycho-Oncology from the Complutense University of Madrid
- Degree in Psychology from the University of Jaén
- Member of: Spanish Society of Psycho-Oncology; Spanish Association of Health Psychology (AEPSIS); Ethics Committee for Research with Medicines (CEIm); Provincial de Jaén - Research Ethics Committee

Professors

Dr. Alberich Martí, Ricardo

- Specialist in Mathematical Sciences and Computer Science
- Member of the Computational Biology and Bioinformatics Research Group (BIOCOM)
- Professor of Mathematical and Computer Sciences and Computer Science and Artificial Intelligence at the University of the Balearic Islands (UIB)

D. Andrés León, Eduardo

- Head of the Bioinformatics Unit at the Institute of Parasitology and Biomedicine "López-Neyra" - CSIC"
- Associate Editor at BMC Genomics
- *Academic Editor* at Public Library of Science (PLOS One)
- Biostatistician at the Familial Hypercholesterolemia Foundation
- Technician in charge of the Central Unit of Bioinformatics and Computational Biology at the Institute of Biomedicine in Seville
- Degree in Biology and Molecular Biology, Universidad Autónoma de Madrid

Dr. Álvarez Cubero, María Jesús
- Researcher and professor
- Professor of the Department of Biochemistry Molecular Biology and III and Immunology, University of Granada
- Genyo Researcher
- PhD in Biology, University of Granada
- Degree in Biology from the University of Granada
- Research stay at the University of North Texas
- Research stay at the University of Coimbra, Portugal
- Research stay at the Universitá Tor Vergata

Dr. Astudillo González, Aurora
- PhD in Medicine and former Scientific Director of the Biobank of the Principality of Asturias
- Former Professor of Pathological Anatomy at the University of Oviedo
- Professor at the University of Oviedo and linked to the Central University Hospital of Asturias
- TEDx Talks Speaker
- European Board of Neuropathology
- European Board of Pathology

Dr. Burón Fernández, María del Rosario
- Physician of the Internal Medicine Department at the Infanta Cristina University Hospital
- Specialist in Internal Medicine
- Degree in Medicine and Surgery

Dr. Carmona Bayonas, Alberto
- Medical Oncology Service at Morales Meseguer University Hospital. Murcia, Spain
- Hematology and Medical Oncology Service at the University Hospital Morales Meseguer. Murcia, Spain

Dr. Ciruelos Gil, Eva Maria
- Coordinator of the Breast Cancer Unit of HM Hospitals
- Oncologist at the 12 de Octubre University Hospital
- Professor of the Department of Medicine at the Complutense University of Madrid
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- Specialist in Medical Oncology at the 12 de Octubre University Hospital
- Member of the SOLTI Breast Cancer Research Group (President), Breast Pathology Working Group of the Breast Cancer Unit of the Hospital Universitario 12 de Octubre, Hospital Pharmacy Commission of the 12 de Octubre University Hospital., ANEP

Dr. De Andrés Galiana, Enrique
- PhD in Mathematics and Computer Engineering
- Associate Professor of Computer Science in the Department of Mathematics at the University of Oviedo
- ITM Automation at CSC
- Programmer Analyst at OMVESA
- PhD in Mathematics and Statistics from the University of Oviedo
- Computer Engineer at the University Pontificia of Salamanca
- MSC SoftComputing, Intelligent Data Analysis and Artificial Intelligence from the University of Oviedo

Dr. De la Haba-Rodríguez, Juan
- Specialist in Medical Oncology the Reina Sofía University Hospital
- Specialist in Medical Oncology at San Juan de Dios Hospital
- Researcher at IMIBIC

- Professor of Oncology at the University of Cordoba
- PhD in Medicine from the University of Córdoba
- Member of the New Cancer Therapies Group at the Maimonides Institute of Biomedical Research of Cordoba (IMIBIC)
- Acknowledgements: Averroes de Oro Ciudad de Córdoba Award in Medical Sciences, Special Mention in the Al-Andalus Awards, Bandera de Andalucía a los Valores Humanos (Andalusian Flag for Human Values)

Mr. Fernández Martínez, Juan Luis
- CEO and Co-Founder of StockFink
- Co-Founder of DeepBioInsights
- Professor of Applied Mathematics
- Director of the Inverse Problems, Optimization and Machine Learning Group in the Department of Mathematics, University of Oviedo

Dr. Figueroa Conde-Valvís, Angélica
- Coordinator of the Epithelial Plasticity and Metastasis Group at the Institute of Biomedical Research of A Coruña
- Stays at the National Institute of Health in the USA and in Australia. USA and Australia
- PhD in Molecular Biology from the Autonomous University of Madrid (UAM)
- Degree in Biology from the Complutense University of Madrid (UCM)

Dr. García Casado, Zaida
- Molecular Biologist at the Laboratory of Molecular Biology of the Valencian Institute of Oncology Foundation
- Researcher at the La Fe University Hospital
- PhD in Molecular Genetics from the University of Valencia
- Degree in Science Biology from the University of Valencia

Dr. García-Foncillas López, Jesús
- Director of the Oncohealth Institute
- Director of the Chair of Molecular Individualized Medicine in the Autonomous University of Madrid
- Director of the Oncology Department of the University Hospital Fundación Jiménez Díaz
- Director of the Translational Oncology Division of the Health Research Institute (FJD-UAM)
- Specialist in Oncology
- Professor of Oncology at the Autonomous University of Madrid

Mr. Gomila Salas, Juan Gabriel
- CEO and Co-Founder at Frogames
- Principal CEO at Flyleaf Studios
- Professor of Computer Science and Artificial Intelligence at the University of the Balearic Islands
- New Technologies Instructor at Udemy
- Game Producer & Project Manager in Playspace
- Degree in Mathematics from the University of the Balearic Islands

Dr. González Gomáriz, José
- Health Researcher at the Institute of Health Research of Navarra (IdiSNA)
- Healthcare Trainer
- Master's Degree in Bioinformatics, University of Murcia

Dr. Hoyos Simón, Sergio
- Assistant Physician of the Medical Oncology Service at the Rey Juan Carlos Hospital
- Assistant Physician of the Medical Oncology Service at the Fundación Alcorcón University Hospital
- Assistant Physician of the Medical Oncology Department at the Infanta Sofia University Hospital
- Assistant Physician of the Medical Oncology Department at the 12 de Octubre University Hospital
- Volunteer in Health Campaign in Cameroon with ONGD Zerca y Lejos
- Degree in Medicine from the Complutense University of Madrid (UCM)

Dr. Intxaurrondo, Ander
- Data Architect at Accenture
- Data Scientist at Pragsis Bidoop
- Technical Researcher at the Supercomputing Center of Barcelona
- Technical Researcher at Dinycon Sistemas
- Researcher at IXA PNL Research Group
- Graphic Designer at Akimu Proyectos Turísticos
- PhD in Natural Language Processing the University of the Basque Country*Euskal Herriko Unibertsitatea* (UPV/EHU)
- Graduate in Management Informatics at Albert-Ludwig University
- Master in Language Analysis and Processing, University of the Basque Country*Euskal Herriko Unibertsitatea*(UPV/EHU)

Dr. Jiménez Fonseca, Paula
- Medical Oncologist in the Digestive and Endocrine Tumors Section at the Central de Asturias University Hospital
- PhD in Medicine from the University of Oviedo
- Researcher and Coordinator of scientific studies for the Spanish Group of Neuroendocrine and Endocrine Tumors (GETNE)
- Researcher and Coordinator of scientific studies for the Spanish Society of Medical Oncology (SEOM)
- Coordinator of the ICARO Registry of Adrenocortical Cancer in the Spanish Society of Endocrinology and Nutrition (SEEN)
- President of the AGAMENON Gastric Cancer Research Group of the Spanish Society of Medical Oncology (SEOM)
- Member of the Spanish Society of Endocrinology and Nutrition (SEEN), Spanish Society of Medical Oncology (SEOM), TTD (Board of Directors)

Dr. Lage Alfranca, Yolanda
- Medical Specialist in Oncology
- Physician of the Oncology Department at the Fundación Jiménez Díaz University Hospital
- Speaker at many specialized conferences and congresses
- Degree in Medicine and Surgery
- Member of the Spanish Society of Medical Oncology

Dr. López Guerrero, José Antonio

- Clinical Head of the Molecular Biology Laboratory of the Medical Oncology Service at the Instituto Valenciano de Oncología (IVO)
- PhD in Biology

Dr. López López, Rafael

- Head of the Medical Oncology Department at the Santiago de Compostela University Hospital Complex
- Director of the Translational Medical Oncology Group at the Health Research Institute of Santiago de Compostela
- Creator of the Medical Oncology Service at the Txagorritxu Hospital. Vitoria, Spain
- Research Physician at the Oncology Department of the Free University Hospital. Amsterdam
- Principal Investigator of more than 100 clinical trials, highlighting the field of Translational Research in Solid Tumors
- Author of more than 200 articles in prestigious national and international journals
- Founding Partner of the company Nasasbiotech
- Degree in Medicine from the Autonomous University of Madrid (UAM)
- Numerary member of the Royal Academy of Medicine and Surgery of Galicia
- Member of the European Society for Medical Oncology (ESMO), Spanish Society for Medical Oncology (SEOM), American Society of Clinical Oncology (ASCO), American Association for Cancer Research (AACR)

Dr. Martínez González, Luis Javier

- Head of the Genomics Unit of the Genomics and Oncology Research Center (GENYO)
- Researcher of the genetic identification project of Christopher Columbus and his relatives
- PhD with extraordinary award in the Area of Biomedicine from the University of Granada
- Degree in Biological Sciences from the University of Granada
- Expert in Biotechnology from the National Distance University

Dr. Martínez Iglesias, Olaia

- Director of the Medical Epigenetics Laboratory at EuroEspes
- Researcher at the Alberto Sols Biomedical Research Institute
- Leader of the Epithelial Research Plasticity and Metastasis Group at the Institute of Biomedical Research of A Coruña.(INIBIC)
- PhD in Biomedicine from the Autonomous University of Madrid
- Degree in Biology from the from A Coruña University

Mr. Paramio Gonzalez, Jesús María

- Division Head of the Molecular Oncology Unit at the Energy, Environmental and Technological Research Center (CIEMAT)
- Researcher at the Biomedical Research Institute of the 12 de Octubre University Hospital
- Specialist in Cell Biology at the Energy, Environmental and Technological Research Center (CIEMAT)

Dr. Pascual Martínez, Tomás
- Doctor specialist in Oncology at the Barcelona Clinical Hospital
- CSO at SOLTI
- Oncology Assistant Physician at the Institut d'Investigacions Biomèdiques August Pi i Sunyer
- Oncologist at the University Hospital of La Princesa
- Oncologist at the 12 de Octubre University Hospital

Dr. Pérez Gutiérrez, Ana María
- Bioinformatician and Genomics Specialist
- Researcher at the Center for Genomics and Oncology Research
- Bioinformatics in the Hospital Virgen del Rocio University Hospital
- Graduate in Biotechnology from the Pablo de Olavide University
- Master in Regenerative Biomedicine from the University of Granada

Dr. Ribalta, Teresa
- Pathologist and Neuropathologist at Clinic Hospital of Barcelona, IDIBAPS
- Neuropathology Specialist
- Head of the Department of Pathology and Director of the Biobank at Hospital Sant Joan de Déu
- Head of the Pediatric Pathology Section at Clinic Hospital of Barcelona
- Professor and lecturer of Anatomic Pathology at the University of Barcelona
- Degree in Medicine from the University of Barcelona

Mr. Sánchez Rubio, Javier
- Area Specialist at the University Hospital of Getafe
- University Diploma in Health Technology Assessment from the Pompeu Fabra University
- Master's Degree in Pharmaceutic Sciences at Complutense University of Madrid (UCM)

Mr. Olivas Varela, José Ángel
- Director of the Soft Management of Internet and Learning (SMILe) Research Group
- Research Collaborator of the Berkeley Initiative in Soft Computing (BISC) of the University of California
- Research Collaborator at the Artificial Intelligence Center at SRI International, Stanford University
- Research Collaborator of the Aerospace Engineering and Services Group (INSA-NASA)
- Director of the IT Department at Project & Portfolio Management (PPM)
- Consultant in Intelligent Systems for companies such as Southco, Danone or ATT
- Member of the Spanish Association for Artificial Intelligence

Dr. Mir Torres, Arnau
- Collaborator of the Soft Computing and Image Processing and Aggregation Research Group (SCOPIA)
- PhD from the University of Barcelona
- Specialist in Mathematical Sciences and Computer Science
- Full Professor in the areas of Mathematical and Computer Sciences, Computer Science and Artificial Intelligence

Dr. Soares, Felipe
- Artificial Intelligence and Machine Learning Engineer at Apple
- Text Mining Research Engineer at the National Supercomputing Center. Barcelona
- Engineer with Machine Learning Focus
- PhD in Engineering from the Universidade Federal do Rio Grande do Sul
- PhD in Engineering Industrial from the Universidade Federal do Rio Grande do Sul
- Master's Degree in Computer Science from Universidade Federal do Rio Grande do Sul

Dr. Rueda Fernández, Daniel
- Head of Biomarker Discovery and Pharmacogenomics Unit at PharmaMar
- Head of the Genetic Studies in Hereditary Cancer at the 12 de Octubre University Hospital
- Molecular Biologist at Gemolab S.L
- Research Scientist at Sylentis
- PhD in Molecular Biochemistry and Biology from the Complutense University of Madrid (UCM)
- Degree in Biochemistry from the Complutense University of Madrid (UCM)

Mr. Segura Ruiz, Víctor
- CIMA University of Navarra (Bioinformatics Platform)
- Director of the Unit

Mr. Vázquez García, Miguel
- Genome Informatics Group Leader at Barcelona Supercomputing Center
- Academic Researcher
- Degree in Life Sciences and Genome Informatics
- Teacher

Dr. Velastegui Ordóñez, Alejandro
- Oncologist at the Rey Juan Carlos University Hospital. Spain
- Rotation at the Digestive Tumors Clinical Research Unit at the Spanish National Cancer Research Center (CNIO)
- Specialty in Clinical Immunology at the Gregorio Marañon University General Hospital
- Specialty in Medical Oncology at the University Hospital Fundación Alcorcón
- Degree in Medicine from the Catholic University of Santiago de Guayaquil

Ms. Cajal Campo, Begoña
- Specialist in Radiodiagnostics at the Alcorcón Foundation University Hospital
- Medical specialist in Radiodiagnosis at the Central Unit of Radiodiagnosis
- Residence at the Reina Sofia University Hospital in Cordoba
- Doctoral Graduate, Complutense University, Madrid
- Postgraduate Diploma in Breast Radiology from the University of Barcelona
- Diploma of Advanced Studies in Surgical Specialties from the University of Cordoba
- Degree in Medicine from the University of Granada

Dr. Hernando Polo, Susana
- Medical Oncology Specialist at the University Hospital Fundación Alcorcón
- Master's Degree in Molecular Oncology at the Spanish National Cancer Research Center (CNIO)
- Member of the Mortality Commission at the Fundación Alcorcón University Hospital
- Lecturer in the training of Resident Doctors
- Degree in Medicine and Surgery from the Autonomous University of Madrid

Dr. Hurtado Nuño, Alicia
- Medical Oncology specialist at the University Hospital Fundación Alcorcón
- Coordinator of the Tumor Registries of the Spanish Group of Orphan and Infrequent Tumors. GETTHI
- Degree in Medicine and Surgery from the Rey Juan Carlos I University

Dr. Mielgo Rubio, Xabier
- Medical Oncology Specialist at the University Hospital Fundación Alcorcón
- Professor of Oncology, Rey Juan Carlos University
- Degree in Medicine and Surgery, University of the Basque Country
- Specialty in Immuno-Oncology at the University Clinic of Navarra
- Master's Degree in Palliative Care from the University of Valladolid
- Master's Degree in Research Methodology from the Autonomous University of Barcelona
- Master's Degree in Neoplastic Diseases from the University of the Basque Country
- Member of the Board of Directors of the Spanish Group of Immuno-Biological Therapies in Cancer (GÉTICA) and the Spanish Group of Orphan and Infrequent Tumors (GETTHI)

Dr. Reyna, Carmen

- Specialist in Medical Oncology
- Specialist Area Physician in the Andalusian Health Service
- Physician at the Oncology Department of the Quirónsalud Hospital Group
- Degree in Medicine from the University of Navarra

Dr. De Torres Olombrada, María Victoria

- Medical Specialist in Radiation Oncology at the University Hospital of Fuenlabrada
- Supervisor of Radioactive Installations, license granted by the Nuclear Safety Council
- Degree in General Medicine from the Faculty of Medicine of the Autonomous University of Madrid

Dr. Martos Torrejón, Sara

- Attending Orthopedic Surgery and Traumatology physician at the Fundación Alcorcón University Hospital
- Assistant Physician in the Orthopedic Surgery and Traumatology Service at Quirónsalud University Hospital. Madrid
- Specialist in Orthopedic and Digestive System Surgery at the Fundación Alcorcón University Hospital
- Degree in Medicine and Surgery from the Autonomous University of Madrid
- Member of: Spanish Society of Orthopedic Surgery and Traumatology (SECOT); Matritense Society of Orthopedic Surgery and Traumatology (SOMACOT); Spanish Sarcoma Research Group (GEIS)

Dr. Montes Berges, Beatriz

- Psychologist and Criminologist
- Principal Investigator for Spain of the European project Net-Care (Networking and Caring For Migrant And Refugee Women)
- Director of the project of the State Pact on Prevention and Intervention in Gender Violence
- Professor of Psychology at the University of Jaén
- Gestalt Therapist
- Scientific Advisor of the Commissions of Palliative Care of the Western Andalusia Official College of Psychology
- Author of books such as "Las princesas que juegan al fútbol y los príncipes que saltan a la comba. Student awareness of the presence of stereotypes and strategies to avoid their influence on decision making", "Empatas. Why are there people who can't watch the news?"
- Psychologist and Criminologist, University of Granada
- PhD in Psychology, University of Granada
- Member of: President of the Association of Psychological Health Centers (ACESAP)

Dr. Ortega Armenteros, María Carmen

- Physician in the Palliative Care Support Team. Jaen Hospital Complex
- Physician in the Mixed Palliative Care Support Team. San Juan de la Cruz Hospital
- Physician in the Home Care Unit of the Spanish Association Against Cancer in collaboration with the Andalusian Health Service
- PhD in Medicine
- Degree in Medicine and Surgery. University of Granada
- Specialist in Medical Oncology. San Cecilio Clinical University Hospital
- Master's Degree in Palliative Care University of Valladolid (UVa)
- Specialist in Palliative Care. University of Granada
- Member of: Spanish Association Against Vocal Cancer; Spanish Society of Palliative Care (SECPAL)

Ms. Pino Estrada, Marta

- Psycho-oncologist at the Spanish Association Against Cancer (AECC)
- Psychologist at Clínica de Rehabilitación Integral Bartolomé Puerta, interdisciplinary center
- Degree in Psychology from the University of Jaén
- Specialist in Child Psychology and Neuropsychology at Euroinnova International Online Education
- Master's Degree in Psycho-Oncology from the Complutense University of Madrid

Dr. Cárdenas Quesada, Nuria

- Specialist in Medical Oncology
- Assistant Physician, Medical Oncology Department Jaen University Hospital
- Secretary of the Thoracic Tumor Subcommittee. Jaen University Hospital
- Founding Partner Association of Bioethics and Law (ABD)
- Teaching Coordinator of multiple clinical sessions accredited by the Health Quality Agency of Andalusia
- Tutor of Medical Oncology Residents. Jaen University Hospital
- Degree in Medicine and Surgery. University of Granada
- Full PhD and Research Sufficiency in advances in Radiology (Diagnostic and Therapeutic), Physical Medicine and Medical Physics. University of Granada

Dr. Aranda López, María

- Expert psychologist in Emergencies and Disasters
- PhD in Psychology
- Collaborator in various volunteer programs, health programs, programs for people at risk of social exclusion or vulnerable and employment orientation programs
- Member of: Psychology Office (GP); University of Jaén; Psychosocial Analysis of Behavior in the New Social Reality Research Group (HUM-651); Psychological Evaluation and Intervention Group (HUM-836)

Dr. Cardeña Gutiérrez, Ana

- Medical Oncology specialist at the Nuestras Señora de Candelaria University Hospital
- Specialist in Oncology at the Alcorcón Foundation University Hospital
- Stay at Capital & Coast District Health Board. Wellington Regional Hospital
- Stay at Melanoma Institute Australia
- Stay at Sinai Health System
- Specialised in Physical Exercise and Oncology from the Autonomous University of Madrid
- Master in Medical Oncology from the University of Girona
- Master in Neoplasms of the thoracic cavity by the University Alfonso X el Sabio
- Master's Degree in Molecular Oncology from Rey Juan Carlos University
- Degree in Medicine from the Autonomous University of Madrid

05

Structure and Content

The Advanced Master's Degree in Comprehensive Medical Oncology has a carefully designed structure and content to offer a complete and enriching learning experience. The program includes a variety of multimedia resources, detailed videos, complementary readings and clinical guides that provide an innovative and effective approach in the process of updating participants.

"

You will have access to a wide variety of multimedia resources such as interactive presentations, in-depth videos and recorded lessons, which offer a dynamic and visual approach to learning"

Module 1. Molecular Biology

1.1. Molecular Mechanisms of Cancer
    1.1.1. Cellular Cycle
    1.1.2. Detachment of Tumor Cells
1.2. Reprogramming of the Tumor Microenvironment
    1.2.1. Tumor Microenvironments: An Overview
    1.2.2. TME as a Prognostic Factor in Lung Cancer
    1.2.3. TME in the Progression and Metastasis of Lung Cancer
        1.2.3.1. Cancer-Associated Fibroblasts (CAF)
        1.2.3.2. Endothelial Cells
        1.2.3.3. Hypoxia in Lung Cancer
        1.2.3.4. Inflammation
        1.2.3.5. Immune Cells
    1.2.4. Contribution of TME to Therapeutic Resistance
        1.2.4.1. Contribution of TME to Radiotherapy Resistance
    1.2.5. TME as a Target Treatment in Lung Cancer
        1.2.5.1. Future Directions
1.3. Tumor Immunology: Basis of Cancer Immunotherapy
    1.3.1. Introduction to the Immune System
    1.3.2. Tumor Immunology
        1.3.2.1. Tumor-Associated Antigens
        1.3.2.2. Identification of Tumor-Associated Antigens
        1.3.2.3. Types of Tumor-Associated Antigens
    1.3.3. The Bases of Immunotherapy in Cancer
        1.3.3.1. Introduction to the Immunotherapeutic Approaches
        1.3.3.2. Monoclonal Antibodies in Cancer Therapy
            1.3.3.2.1. Production of Monoclonal Antibodies
            1.3.3.2.2. Types of Therapeutic Antibodies
            1.3.3.2.3. Mechanisms of Action of Antibodies
            1.3.3.2.4. Modified Antibodies
    1.3.4. Non-Specific Immune Modulators
        1.3.4.1. Bacillus of Calmette-Guérin
        1.3.4.2. Interferon-α
        1.3.4.3. Interleucina-2
        1.3.4.4. Imiquimod

    1.3.5. Other Approaches for Immunotherapy
        1.3.5.1. Dendritic Cell Vaccines
        1.3.5.2. Sipuleucel-T
        1.3.5.3. CTLA-4 Blocking
        1.3.5.4. Adoptive T-cell Therapy
            1.3.5.4.1. Adoptive Cell Therapy With T-cell Clones
            1.3.5.4.2. Adoptive Cell Therapy With Tumor-Infiltrating Lymphocytes
1.4. Molecular Mechanisms Involved in the Invasion and Metastasis Process

Module 2. Genomic or precision oncology

2.1. Use of Gene Expression Profiling in Cancer
2.2. Molecular Subtypes of Breast Cancer
2.3. Prognostic-Predictive Genomic Platforms in Breast Cancer
2.4. Therapeutic Targets in Non-Small Cell Lung Cancer
    2.4.1. Introduction
    2.4.2. Molecular Detection Techniques
    2.4.3. EGFR Mutation
    2.4.4. ALK Translocation
    2.4.5. ROS Translocation
    2.4.6. BRAF Mutation
    2.4.7. NRTK Rearrangements
    2.4.8. HER2 Mutation
    2.4.9. MET Mutation/Amplification
    2.4.10. RET Rearrangements
    2.4.11. Other Molecular Targets
2.5. Molecular Classification of Colon Cancer
2.6. Molecular Studies in Gastric Cancer
    2.6.1. Treatment of Advanced Gastric Cancer
    2.6.2. HER2 Overexpression in Advanced Gastric Cancer
    2.6.3. Identification and Interpretation of HER2 Overexpression in Advanced Gastric Cancer
    2.6.4. Drugs With Activity Against HER2
    2.6.5. Trastuzumab in the First Line of Advanced Gastric Cancer
        2.6.5.1. Treatment of HER2+ Advanced Gastric Cancer After Progression to Trastuzumab-Based Regimens
    2.6.6. Activity of Other Anti-HER2 Drugs in Advanced Gastric Cancer

Module 3. Changes in Current Clinical Practice and New Applications With Genomic Oncology

Module 4. Use of Unix and Linux in Bioinformatics

Module 6. Graphical Environment in R

Module 7. Statistical analysis in R

7.1. Discrete Probability Distributions
7.2. Continuous Probability Distributions
7.3. Introduction to Inference and Sampling (Point Estimate)
7.4. Confidence Intervals
7.5. Hypothesis Testing
7.6. ANOVA of a Factor
7.7. Adjustment kindness (Chi-- Square Test)
7.8. Fitdist Package
7.9. Introduction to Multivariant Statistics

Module 8. Machine Learning for Analysing Big Data

8.1. Introduction to Machine Learning
8.2. Presentation of the Problem, Loading Data and Libraries
8.3. Data Cleaning (Nas, Categories, Dummy Variables)
8.4. Exploratory Data Analysis (ggplot) + Crossed Validation
8.5. Prediction Algorithms: Multiple Linear Regression, Support Vector Machine, Regression Trees, Random Forest
8.6. Classification Algorithms: Logistic Regression, Support Vector Regression, Classification Trees, Random Forest…
8.7. Adjustment of the Hyper Parameters of the Algorithm
8.8. Predicting Data with Different Models
8.9. ROC Curves and Confusion Matrices for Assessing Model Quality

Module 9. Data Mining Applied to Genomics

9.1. Introduction
9.2. Initiation to Variables
9.3. Text Cleaning and Conditioning
9.4. Generating the Word Matrix
    9.4.1. Creating the TDM Word Matrix
    9.4.2. Visualizations on the TDM Word Matrix
9.5. Description of the Word Matrix
    9.5.1. Graphic Representation of the Frequencies
    9.5.2. Creating a Word Cloud
9.6. Creating a Data Frame for K-NN
9.7. Creating a Classification Model
9.8. Validating a Classification Model
9.9. Guided Practical Exercise on Data Mining in Cancer Genomics

Module 10. Techniques for extracting genomic data

10.1. Introduction to "Scraping Data"
10.2. Importing Spreadsheet Data Files Stored Online
10.3. Scraping HTML Text
10.4. Scraping Data from an HTML Table
10.5. Using APIs for Data Scraping
10.6. Extracting Relevant Information
10.7. Using the Rvest Package of R
10.8. Obtaining Data Distributed Over Multiple Pages
10.9. Extracting Genomic Data from the "My Cancer Genome" Platform
10.10. Extracting Information on Genes from the HGNC HUGO Gene Nomenclature Committee Database
10.11. Extracting Pharmacological Data from the "OncoKG" (Precision Oncology Knowledge Base) Database

Module 11. New techniques in the age of genomics

11.1. Understanding the New Technology: Next Generation Sequence (NGS) in clinical practice
    11.1.1. Introduction
    11.1.2. Background
    11.1.3. Problems in the Application of Sanger Sequencing in Oncology
    11.1.4. New Sequencing Techniques
    11.1.5. Advantages of Using NGS in Clinical Practice
    11.1.6. Limitations of Using NGS in Clinical Practice
    11.1.7. Terms and Definitions of Interest
    11.1.8. Types of Studies Depending on Their Size and Depth
        11.1.8.1. Genome
        11.1.8.2. Exomes
        11.1.8.3. Multigenic Panels
    11.1.9. Stages of NGS Sequencing
        11.1.9.1. Preparing Samples and Libraries
        11.1.9.2. Preparing Templates and Sequencing
        11.1.9.3. Bioinformatic Processing
    11.1.10. Annotation and Classification of Variants
        11.1.10.1. Population Databases
        11.1.10.2. Locus-Specific Databases
        11.1.10.3. Bioinformatic Predictors of Functionality

Module 12. Application of bioinformatics in genomic oncology

Module 13. Breast Cancer

Module 14. Lung Cancer

14.1. Principles of Lung Cancer
    14.1.1. Epidemiology
    14.1.2. Risk Factors
14.2. Major Mutations: Potential Targets
14.3. Diagnosis
14.4. Staging
14.5. Treatment of Microcytic Cancer with Localized Disease
14.6. Treatment of Microcytic Cancer with Widespread Disease
14.7. Treatment of non-small Cell Lung Cancer Localized Disease
14.8. Treatment of non-small Cell Lung Cancer Advanced Disease
    14.8.1. Adenocarcinoma
    14.8.2. Squamous cell carcinoma
14.9. Future Perspectives
14.10. Primary prevention

Module 15. ORL tumours

15.1. ORL Cancer
    15.1.1. Epidemiology
    15.1.2. Risk Factors
15.2. Major Mutations: Potential Targets
15.3. Diagnosis
15.4. Staging
15.5. Treatment of Localized Laryngeal Tumors
15.6. Treatment of Pharynx Tumors
15.7. Treatment of Advanced ORL Tumors
15.8. Treatment of Localized Cavum Tumors
15.9. Treatment of Advanced Cavum Tumors
15.10. Future Perspectives

Module 16. Colorectal cancer and anal canal

16.1. Colon and anal canal
    16.1.1. Epidemiology
    16.1.2. Risk Factors
16.2. Diagnosis
16.3. Staging
16.4. Treatment of Localized Disease Colon Cancer
16.5. Treatment of Localized Rectal Cancer
16.6. Treatment of Advanced Disease Colorectal Cancer
16.7. Treatment of Anal Canal Tumors
16.8. Future Perspectives
16.9. Screening
16.10. Genetic Associate Syndromes

Module 17. Non-colorectal digestive tumors

17.1. Non-colorectal digestive tumors
    17.1.1. Epidemiology
    17.1.2. Risk Factors
17.2. Diagnosis
17.3. Staging
    17.3.1. Oesophageal Cancer
    17.3.2. Stomach Cancer
    17.3.3. Pancreatic Cancer
17.4. Oesophageal Cancer
    17.4.1. Localized Disease Treatment
    17.4.2. Treatment of Extended Disease
17.5. Stomach Cancer
    17.5.1. Localized Disease Treatment
    17.5.2. Treatment of Extended Disease
17.6. Pancreatic Cancer
    17.6.1. Localized Disease Treatment
    17.6.2. Treatment of Extended Disease
17.7. Biliary Tract Cancer
17.8. Hepatocellular Carcinoma
17.9. Neuroendocrine Tumors
17.10. Future Perspectives

Module 18. Gynecologic Tumors

18.1. Gynecologic Tumors
    18.1.1. Epidemiology
    18.1.2. Risk Factors
18.2. Diagnosis
18.3. Staging
    18.3.1. Ovarian Cancer
    18.3.2. Cervical Cancer
    18.3.3. Endometrial Cancer
18.4. Treatment of Localized Ovarian Cancer
18.5. Advanced Ovarian Cancer Treatment
18.6. Localized Uterine Cancer Treatment
    18.6.1. Cervix
    18.6.2. Endometrium
18.7. Advanced Uterus Cancer Treatment
    18.7.1. Cervix
    18.7.2. Endometrium
18.8. Uterine Sarcomas
18.9. Genetic Syndromes
18.10. Future Perspectives

Module 19. Urological tumors

19.1. Evolution
    19.1.1. Epidemiology
19.2. Diagnosis
    19.2.1. Prostate Cancer
    19.2.2. Urothelial Cancer
    19.2.3. Renal Cancer
    19.2.4. Testicular Cancer
19.3. Staging
    19.3.1. Prostate Cancer
    19.3.2. Urothelial Cancer
    19.3.3. Renal Cancer

19.4. Localized Prostate Cancer Treatment
19.5. Advanced Prostate Cancer Treatment
19.6. Localized Urothelial Cancer Treatment
19.7. Advanced Urothelial Cancer Treatment
19.8. Renal Cancer Treatment
19.9. Testicular Cancer Treatment
19.10. Penile Cancer

Module 20. Sarcomas and melanomas

20.1. Principles of Mesenchymal Tumors
20.2. Diagnosis of Mesenchymal Tumors
20.3. Surgical Treatment of Bone and Soft Tissue Tumors
20.4. Sarcoma Medical Treatment
    20.4.1. Bones
    20.4.2. Soft Parts
20.5. Treatment of GIST
20.6. Melanoma
20.7. Diagnosis and Staging Melanoma
20.8. Localized Melanoma Treatment
20.9. Advanced Melanoma Treatment
20.10. Future Perspectives
    20.10.1. Bone and Soft Tissue Tumors
    20.10.2. Melanoma

Module 21. Brain Tumors

21.1. Evolution
    21.1.1. Epidemiology
21.2. Classification
21.3. Genetic Associate Syndromes
21.4. Prognostic and Predictive Response Factors
21.5. Diagnosis
21.6. Treatment of Low Grade Tumors
21.7. Treatment of High Grade Tumors
21.8. Immunotherapy
21.9. Cerebral Metastases
21.10. Future Perspectives

Module 22. Radiotherapy

22.1. Evolution
22.2. Types of Radiotherapy
22.3. Treatment of Breast Cancer
22.4. Treatment of Lung Cancer
22.5. Treatment of Prostate Cancer
22.6. Treatment of Digestive Tumors
22.7. Treatment of Brain Tumors
22.8. Treatment of ORL Tumors
22.9. Orbital Tumors, Mediastinal Tumors, Mesenchymal Tumors
22.10. Palliative Radiotherapy

Module 23. Characterization and Fields of Application of Psycho-Oncology

23.1. Cancer and Its Impact on Current Society
    23.1.1. Cultural Variability
    23.1.2. Incidence, Prevalence and Mortality
23.2. Myths, Beliefs and Pseudotherapies Related to Cancer
23.3. Medical Care for Cancer Patients
    23.3.1. Early Detection of Cancer
    23.3.2. Surgery and Treatment
23.4. Risk Factors and Cancer
    23.4.1. Psychoneuroimmunology
    23.4.2. Stress, Coping Styles and Personality Variables
23.5. Cancer Prevention
    23.5.1. Primary and Secondary Prevention
    23.5.2. Health Education and Healthy Lifestyle Habits
23.6. Functions of the Psycho-Oncologist: Their Role Within the Hospital Environment
23.7. Teaching, Training, Specialization and Accreditation in Psycho-Oncology
23.8. Objectives and Areas of Psychological Intervention for Cancer Patients and their Families
23.9. Other Disciplines Related to Psycho-Oncology
    23.9.1. Psychology as an Intersection Between Oncology and Health Psychology
23.10. Approach to the Social Needs of the Cancer Patient
    23.10.1. Economic and Occupational Impact. Job Reintegration
    23.10.2. Social Support and Cancer

Module 24. Psychological Treatments in Cancer and Third Generation Therapies

24.1.   Effective Psychological Treatments in Psycho-Oncology
24.2.   Cognitive-Behavioral Therapy in Cancer Treatment
    24.2.1.   Identification of Automatic Thoughts and Modification of Cognitions
    24.2.2.   Activation Control Techniques
        24.2.2.1. Diaphragmatic Breathing Training
        24.2.2.2. Progressive Muscular Relaxation
    24.2.3.   Behavioral Activation
    24.2.4.   Exposition Techniques and Guided Imagination
24.3.   Cognitive Training Program
24.4.   Rehabilitation Program Based on Physical Exercise
24.5.   Mindfulness
    24.5.1.   Mindfulness Training Program
    24.5.2.   Compassion and Self-Compassion Practice
24.6.   Acceptance and Commitment Therapy (ACT)
    24.6.1.   Components of ACT and Clinical Methods
24.7.   Therapy Focused on the Search for Meaning
    24.7.1.   Cancer and Feeling. Exploration of the Sources of Meaning
24.8.   Dignity Therapy
    24.8.1.   The Concept of Dignity in Cancer Patients
    24.8.2.   Models of Dignity. Chochinov
24.9.   Systemic Family Therapy
    24.9.1.   Family and Cancer. Most Common Family Dynamics
24.10. Pseudotherapies and Pseudosciences Against Cancer
    24.10.1. Positions of Government Agencies
    24.10.2. Pseudotherapies and Pseudosciences With and Without Scientific Evidence

Module 25. Most Relevant Psychological Aspects According to Different Tumor Locations

25.1.   Leukemias, Lymphomas and Myelomas
    25.1.1.   Bone Marrow Transplantation and Isolation Situations
25.2.   Breast Cancer and Gynecology
    25.2.1.   Body image
    25.2.2.   Sexuality
    25.2.3.   Self-esteem
    25.2.4.   Chemobrain Effect
25.3.   Prostate Cancer
    25.3.1.   Incontinence and Sexual Impotence
25.4.   Colon Cancer and the Digestive System
    25.4.1.   Living with a Colostomy
25.5.   Intervention in Laryngectomized Patients
    25.5.1.   Speech Therapy Intervention
    25.5.2.   Alteration in Social and Work Life
25.6.   Head and Neck Tumors
25.7.   Thyroid Cancer
25.8.   Tumors of the Central Nervous System
    25.8.1.   Cognitive Deficits and Mobility Limitations
25.9.   Lung Cancer
25.10. Child Cancer
    25.10.1. Emotional Development and Child Intellect
    25.10.2. Social Impact on the Child
    25.10.3. Impact on the Family

Module 26. Protocols for Emotional Intervention at the End of Life

26.1. Palliative Care Objectives
26.2. Evaluation of Suffering
26.3. Process of Psychosocial Adaptation at the End of Life
    26.3.1. Adaptive vs. Maladaptive Reactions
26.4. Triadic Interaction Model for Patients, Family and Healthcare Professionals
26.5. Specific Interventions Centered on the Patient
    26.5.1. Anxiety
    26.5.2. Sadness
    26.5.3. Hostility
    26.5.4. Fear
    26.5.5. Blame
    26.5.6. Denial
    26.5.7. Withdrawal
26.6. Specific Needs of the Family. Assessment of the Patient-Family Unit
    26.6.1. Conspiracy of Silence
    26.6.2. Family Claudication
26.7. Interventions Oriented Towards Health Professionals
    26.7.1. Working in Multicultural Teams
    26.7.2. Prevention of Burnout Syndrome
26.8. Attention to the Spiritual Needs of the Patient
    26.8.1. Spiritual Care Model of SECPAL (Spanish Society of Palliative Care)
    26.8.2. Existential Angst and Religious Experience
26.9. Psychological Intervention in Pediatric Palliative Care
26.10. Advance Decision Making Process and Planning (ADP)
    26.10.1. Declaration and Registry of Advance Vital Wills

Module 27. Evaluation and Measurement Instruments

27.1. The Psycho-Oncology Clinical Interview
27.2. Evaluation of the Needs of the Cancer Patient
    27.2.1. Needs Evaluation Questionnaire, (NEQ)
    27.2.2. Patient Needs Assessment Tool, (PNAT)
    27.2.3. The Short-Form Cancer Needs Questionnaire, (CNQ)
27.3. Evaluation of the Quality of Life of the Cancer Patient
    27.3.1. EORTC Questionnaire (European Organization for Research and Therapy of Cancer)
    27.3.2. FACT Questionnaire (Functional Assessment of Cancer Therapy)
    27.3.3. SF 36 Health Questionnaire
27.4. Main Evaluation Questions for Physical Symptoms of Cancer
    27.4.1. Edmonton Symptom Assessment Sytem (ESAS)
    27.4.2. Questions for Pain Assessment
    27.4.3. Questions for Fatigue and Quality of Sleep Evaluation
    27.4.4. Cognitive Screening and Functional State Questionnaires
    27.4.5. Questionnaires for the Evaluation of Sexuality
27.5. Detection of Distress and Assessment of Suffering
    27.5.1. Emotional Distress Screening Questionnaire
    27.5.2. Emotional Distress Thermometer
    27.5.3. Hospital Anxiety and Depression Scale (HAD)
    27.5.4. Subjective Perception of the Passing of Time
        27.5.4.1. Waiting Times in Oncology
27.6. Socio-Familial Assessment and Valuation
    27.6.1. Perceptoin of the Family Function. APGAR Family Questionnaire
    27.6.2. Family Relationship Index (FRI)
    27.6.3. Self Report Family Inventory (SFI)
27.7. Coping Assessment Questionnaires for Cancer Patients
    27.7.1. Mental Adjustment to Cancer (MAC)
    27.7.2. Questionnaire to Measure Coping Styles. Miller Behavioral Style Scale (MBSS)
    27.7.3. COPE Questionnaire
27.8. Assessment Tools for Spiritual Needs
    27.8.1. Spiritual Needs and Well-Being Assessment Scale from GES (Spiritual Group). Part of SEPCAL (Spanish Society for Palliative Care)
    27.8.2. Functional Assessment of Chronic Illness Therapy Spiritual Well Being
    27.8.3. The Patient Dignity Inventory
27.9. Self-Report and Observation
    27.9.1. Clinical Case Formulation
27.10. Psychological Assessment of Children in Palliative Care

Module 28. Communication with the Oncologic Patient

28.1. Illness, Communication and the Helping Relationship
    28.1.1. Doctor-Patient Communication as a Possible Factor of Improvement and Iatrogenesis. Pain and Suffering Prevention
    28.1.2. Communication Barriers
28.2. How to Give Bad News About Cancer
    28.2.1. Answers to Difficult Questions
    28.2.2. Communication in Complicated Situations
28.3. Counselling Techniques in Clinical Practice
    28.3.1. Counselling Attitudes
    28.3.2. Assertive Communication
    28.3.3. Emotional Control
    28.3.4. Problem-Solving and Responsible Decision-Making
28.4. Relationship Models and Therapeutic Influence
    28.4.1. Paternal Model
    28.4.2. Informative Model
    28.4.3. Interpretive Model
    28.4.4. Deliberative Model
28.5. Tools for Emotional Support in Cancer
    28.5.1. How to Speak With a Cancer Patient. Guide for Friends and Family
    28.5.2. Levels of Emotional Interaction
28.6. Non-Verbal Communication in the Support Relationship
28.7. Communication in Palliative and End-of-Life Care
    28.7.1. Learning to Talk About Death
28.8. Talking About Cancer With Children
28.9. Communication in People With Communication Deficits
28.10. Treatment of Cancer in the Media
    28.10.1. Cancer on Social Networks

Module 29. Grief Management

29.1. Death , Culture and Society
    29.1.1. Health Professionals in the Face of Death
29.2. Psychological Evaluation of Grief
    29.2.1. Interview and Specific Instruments for Assessment
29.3. Common Reactions to Grief
    29.3.1. Normal Grief and Complicated Grief
    29.3.2. Vulnerability Factors
    29.3.3. Differential Diagnosis Between Grief and Depression
29.4. Main Theoretical Models About Grief
    29.4.1. Bowlby's Attachment Theory
    29.4.2. Nuclear Beliefs and Meaning Reconstruction
    29.4.3. Conceptual Models About the Trauma
29.5. Objectives of Intervention in Grief and Recommended Interventions
    29.5.1. Facilitating the Normal Process of Grief. Prevention of Complicated Grief
    29.5.2. Suggestions for Intervention Before and After the Death
    29.5.3. Bereavement Psychotherapy from an Integrative Relational Model
29.6. Group Intervention in Attention to Grief
    29.6.1. Psychological Intervention Grief Due to the Loss of a Child
29.7. Stages of Grief
    29.7.1. Bereavement Tasks
29.8. Grief in Children
29.9. Suicide and Cancer
29.10. Psychopharmacology in Attention to Grief

Module 30. Other Psychological Interventions in Specific Cancer-Related Areas

30.1. Psychological Treatment to Give Up Smoking
 30.1.1. Myths About Tobacco
 30.1.2. Analysis of Smoking Behavior. Physical and Psychological Dependence
 30.1.3. Program Structure. Sessions and Methodology
 30.1.4. Abstinence and Prevention of Relapse
30.2. Early Detection of Cancer
 30.2.1. Screening Tests (Mammography, FOBT, Cytology, etc.)
 30.2.2. Anticipatory Anxiety and Difficulties in Participation
 30.2.3. Oncologic Genetic Counseling
30.3. Mutual of Self-Help Groups
30.4. Psycho-Educational Groups for Family Members and Patients
 30.4.1. Topics to Approach and Work Methodology
 30.4.2. Inclusion and Exclusion Criteria
30.5. Psychological Intervention in Cancer Survivors. The Return to "Normality"
30.6. Control of Secondary Effects in Cancer Patients
 30.6.1. Pain control
 30.6.2. Against Fatigue and Sleep
 30.6.3. Sexuality Control
 30.6.4. Cognitive Alterations. Chemobrain Effect
30.7. Preparation and Intervention for Hospitalization and Surgery
30.8. Psychological Preparation for Other Medical Treatment (Chemotherapy, Radiotherapy, etc.)
30.9. Psychological Intervention in Bone Marrow Transplants (BMT)
30.10. Strategies for Training Volunteers in Cancer Patient Care
 30.10.1. The Volunteer Interview. Assignment and Matching of the Volunteer to Each Profile
 30.10.2. Specific Education of the Volunteer. Tutoring and Monitoring

Module 31. Research in Cancer

31.1. World Declaration for Cancer Research
31.2. Methodology of Cancer Research
 31.2.1. Cancer Prevention Area
 31.2.2. Cancer Treatment Area
31.3. Common Errors in Psych-Oncology Research
31.4. Steps to Follow to Carry Out Psycho-Oncology Research
31.5. Epidemiological Research Into Cancer
31.6. Biomedical Research
 31.6.1. Participation in Clinical Trials in Cancer
 31.6.2. Doubts, Risks and Benefits
 31.6.3. Distribution of Clinical Trials Per Type of Cancer
31.7. Main Advances in Research
 31.7.1. Priority Areas of Research in Psycho-Oncology
 31.7.2. Priority Areas of Research in Palliative Care
 31.7.3. New Lines of Research
31.8. Lines of Research from Social Work
31.9. Publications on Psycho-Oncology and Palliative Care in Scientific Journals
 31.9.1. Writing of Scientific Articles

Module 32. Ethical Aspects in Psycho-Oncology and Psychology of Palliative Care

32.1. Telling the Patient the Truth or Not. Managing the Bearable Truth
32.2. Cancer and Ethics: A Complex Interaction
 32.2.1. Principled Bioethics
 32.2.2. Personalistic Bioethics
 32.2.3. Double Effect Principle
32.3. Anthropological Basis
 32.3.1. The Experience of Fragility
 32.3.2. The Experience of Suffering
 32.3.3. The Person as Wounded Healer
32.4. Rights of the Cancer Patient
 32.4.1. Patient Autonomy Law
 32.4.2. Informed consent
 32.4.3. GDPR and Confidentiality of Medical History

The program offers a selection of complementary readings, including scientific articles, reviews and clinical guidelines, which complement and expand the theoretical contents of the program"

06
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.

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

What should a professional do in a given situation? 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 you will 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 in the physician's professional practice.

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. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate 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.

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.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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.

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.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. 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.

20%

15%

15%

3%

20%

17%

7%

3%

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 on the usefulness of learning by observing experts. The system known as 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.

07
Certificate

The Advanced Master's Degree in Comprehensive Medical Oncology guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree issued by TECH Technological University.

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

This **Advanced Master's Degree in Comprehensive Medical Oncology** contains the most complete and up-to-date scientific on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** diploma issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Advanced Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Advanced Master's Degree in Comprehensive Medical oncology**

Official No. of Hours: **3,000 h.**

tech technological university

Awards the following
CERTIFICATE
to

Mr./Ms. _____ with identification number _____.
For having successfully passed and accredited the following program

ADVANCED MASTER'S DEGREE
in
Comprehensive Medical oncology

This is a qualification awarded by this University, equivalent to 3,000 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
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

Advanced Master's Degree in Comprehensive Medical oncology

General Structure of the Syllabus

Year	Subject	Hours	Type	Year	Subject	Hours	Type
1º	Molecular Biology	94	CO	2º	Non-colorectal digestive tumors	94	CO
1º	Genomic or precision oncology	94	CO	2º	Gynecologic Tumors	94	CO
1º	Changes in the Current Clinical Practice and New Applications with Genomic Oncology	94	CO	2º	Urological tumors	94	CO
				2º	Sarcomas and melanomas	94	CO
1º	Use of Unix and Linux in Bioinformatics	94	CO	2º	Brain Tumors	94	CO
1º	Data analysis in Big Data projects: R programming language	94	CO	2º	Radiotherapy	94	CO
				2º	Characterization and Fields of Application of Psycho-Oncology	94	CO
1º	Graphical Environment in R	94	CO				
1º	Statistical analysis in R	94	CO	2º	Psychological Treatments in Cancer and Third Generation Therapies	94	CO
1º	Machine Learning for Analysing Big Data	94	CO				
1º	Data Mining Applied to Genomics	94	CO	2º	Most Relevant Psychological Aspects According to Different Tumor Locations	94	CO
1º	Techniques for extracting genomic data	94	CO				
1º	New techniques in the age of genomics	94	CO	2º	Protocols for Emotional Intervention at the End of Life	94	CO
1º	Application of Bioinformatics in Genomic Oncology	94	CO	2º	Evaluation and Measurement Instruments	94	CO
1º	Breast Cancer	94	CO	2º	Communication with the Oncologic Patient	94	CO
1º	Lung Cancer	94	CO	2º	Grief Management	94	CO
1º	ORL tumours	94	CO	2º	Other Psychological Interventions in Specific Cancer-Related Areas	94	CO
1º	Colorectal cancer and anal canal	94	CO				
				2º	Research in Cancer	94	CO
				2º	Ethical Aspects in Psycho-Oncology and Psychology of Palliative Care	86	CO

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*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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Advanced Master's Degree
Comprehensive Medical Oncology

» Modality: **online**
» Duration: **2 years**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Advanced Master's Degree
Comprehensive
Medical Oncology

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