

General information	
Academic subject	Cancer Genetics
Degree course	Biological Sciences
Academic Year	All
European Credit Transfer and Accumulation System (ECTS)	6
Language	Italian
Academic calendar (starting and ending date)	March 2022-June 2022
Attendance	Not mandatory, but suggested

Professor/ Lecturer	
Name and Surname	Doron Tolomeo
E-mail	doron.tolomeo@uniba.it
Telephone	+39 080 5443582
Department and address	Department of Biology, III floor, Room no.45, Via E. Orabona no.4, 70125 Bari, Italy
Virtual headquarters	Microsoft Teams platform, code 8cl0oxn
Tutoring (time and day)	Every day, after appointment fixed via email

Syllabus	
Learning Objectives	The course aims to provide knowledge of the main characteristics of cancer cell genetics.
Course prerequisites	Basic knowledge of Genetics and Molecular Biology
Contents	<ul style="list-style-type: none"> - Cancer as a heterogeneous group of pathologies with a complex genetic landscape; - Carcinogenesis and Darwinian evolution: multistep processes of neoplastic development; - Adaptive therapies; - Chromothripsis and cancer; - Survival strategies of cancer and mechanisms of alteration of cell proliferation-death balance; - Genomic instability in cancer; - Cancer genes; - Role of non coding genes in cancer; - Sporadic tumours and hereditary predisposition; - Epigenetics of cancer; - Neocentromeres and cancer; - Cancer research, goals and new fields of study.
Books and bibliography	<ul style="list-style-type: none"> -La biologia del cancro, R. Weinberg, Zanichelli editore; -Selected scientific papers
Additional materials	The PowerPoint slides of the lessons are available as support.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
150	40	12 (x2 groups)	98

ECTS		
6	5	1
Teaching strategy		
PowerPoint presentations and explanatory videos. The course is not delivered in e-learning mode.		
Expected learning outcomes		
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Understanding that cancer is a genetic disease originating as the result of multiple alterations triggered by both environmental and hereditary factors; knowing the genetic and epigenetic abnormalities determining its onset and progression. ○ Learning the main genetic-molecular techniques applied to the study of cancer, the goals and the new frontiers achieved in this field. 	
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Knowing how to recognize and apply the concept of "evolution and cancer", identifying and discriminating between oncogenes and tumour-suppressors; understanding scientific publications about topics discussed in the course. 	
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Being able to analyse and evaluate scientific data. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Acquisition of specialized terminology. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Acquire the ability of analyse in depth scientific articles and database regarding topics discussed in the course. 	

Assessment and feedback	
Methods of assessment	Oral exam with pre-assessment (not mandatory) of the student's ability to understand a scientific article about one of topics discussed in the course. In case of failure to such tests the assessment of the aforementioned skills will take place during the oral exam.
Evaluation criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ The understanding of the genetic origin of cancer, the ability to distinguish between hereditary and sporadic cancers, to choose the right genetic-molecular technique and experimental strategy will be evaluated. • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ The PowerPoint presentation on a scientific article concerning the topics discussed in class will help in the assessment of this skill. • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ It will be assessed by verifying the ability to self-evaluate the correctness of the answers provided during the oral exam. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ The use of the most specific terminologies to illustrate the mechanisms of cancer onset and progression will be evaluated. • <i>Communication skills</i> <ul style="list-style-type: none"> ○ The mastery of specialized terminology will be important for the final score. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Assessment of the attitude to carry out in-depth analyses of scientific literature and databases regarding the topics discussed in the course.
Criteria for assessment and attribution of the final mark	The exam involves verifying the understanding of the basic principles of genetics of cancer, of the main genes and pathways involved in tumor transformation



	of cells. The evaluation will be performed by a score out of thirties; the test will be passed with a mark equal to or greater than 18.
Additional information	