



# UNIVERSITÀ DEGLI STUDI DI PALERMO

<b>DEPARTMENT</b>	Biomedicina, Neuroscienze e Diagnostica avanzata		
<b>ACADEMIC YEAR</b>	2018/2019		
<b>BACHELOR'S DEGREE (BSC)</b>	BIOMEDICAL LABORATORY TECHNIQUES		
<b>SUBJECT</b>	LABORATORY MEDICINE TECHNICAL SCIENCES		
<b>TYPE OF EDUCATIONAL ACTIVITY</b>	B		
<b>AMBIT</b>	10341-Scienze e tecniche di laboratorio biomedico		
<b>CODE</b>	19801		
<b>SCIENTIFIC SECTOR(S)</b>	MED/46		
<b>HEAD PROFESSOR(S)</b>	STASSI GIORGIO	Professore Ordinario	Univ. di PALERMO
<b>OTHER PROFESSOR(S)</b>			
<b>CREDITS</b>	6		
<b>INDIVIDUAL STUDY (Hrs)</b>	90		
<b>COURSE ACTIVITY (Hrs)</b>	60		
<b>PROPAEDEUTICAL SUBJECTS</b>			
<b>MUTUALIZATION</b>			
<b>YEAR</b>	1		
<b>TERM (SEMESTER)</b>	2° semester		
<b>ATTENDANCE</b>	Mandatory		
<b>EVALUATION</b>	Out of 30		
<b>TEACHER OFFICE HOURS</b>	<b>STASSI GIORGIO</b> Wednesday 10:00 - 13:00 Laboratorio di Fisiopatologia Cellulare e Molecolare del Dipartimento di Discipline Chirurgiche e Oncologiche con sede in via del Vespro, n. 131 90127 Palermo.		

DOCENTE: Prof. GIORGIO STASSI

<b>PREREQUISITES</b>	Basic knowledge of cell biology, molecular biology, structure and function of nucleic acids and proteins, cytology and histology, anatomy, chemistry
<b>LEARNING OUTCOMES</b>	Knowledge and understanding: the student will need to know the main techniques of cytology, histology, immunohistochemistry and molecular biology to be applied to the study of neoplastic and non-neoplastic samples. Acquiring the skills needed to understand the etiopathogenetic and pathological mechanisms of diseases and alterations in structures, functions and control mechanisms at various levels of integration. Ability to apply knowledge and understanding: the student must be aware of proper sample management in order to obtain the best technical results that will allow proper anatomypathological diagnosis. To this end, it will need to know all the causes of possible laboratory artifacts that can be the cause of diagnostic "pitfalls" and will know the repercussions of these in the patient's clinical management in order to be able to implement a proper strategy to avoid them. Assessment autonomy: the student will need to know the parameters to evaluate the suitability of the prepared preparations according to the various methods and to understand the fundamental role of the technician in the proper management of the laboratory.
<b>ASSESSMENT METHODS</b>	<p>The evaluation will be made via oral test.</p> <p>The sufficiency threshold will be reached if the student shows knowledge and understanding of the issues at least in broad outline, and has application skills sufficient; he must also have presentation and argumentative skills allowing the transmission of his knowledge to the examiner. Below this threshold, the examination will be insufficient. The more the candidate will be able to interact with the examiner with his argumentative and presentation skills, and the more his knowledge and application capabilities will go into detail on the subjects under evaluation, the more the judgement will be positive.</p> <p>The evaluation is expressed using a 30-point scale. ECTS grades: A – A+ Excellent (30-30 cum laude) - Grade descriptors : Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems. ECTS grade : B Very good (27-29) - Grade descriptors: Good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity. ECTS grade: C Good (24-26)- Grade descriptors: Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity ECTS grade: D Satisfactory (21-23)- Grade descriptors: Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline language and independently apply the acquired knowledge. ECTS grade: E Sufficient (18-20) - Grade descriptors: Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject specific language and independently apply the acquired knowledge. ECTS grade: F Fail (1-17) - Grade descriptors: Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge. Exam failed.</p>
<b>EDUCATIONAL OBJECTIVES</b>	ACQUISITION OF SKILLS NECESSARY TO UNDERSTAND THE PATHOGENETIC AND PATHOLOGICAL MECHANISMS OF DISEASES AND ALL THE ALTERATION THAT CONTROL FUNCTIONS AND STRUCTURES AT VARIOUS LEVELS.
<b>TEACHING METHODS</b>	The course includes a total of 90 hours of frontal lessons.
<b>SUGGESTED BIBLIOGRAPHY</b>	PRINCIPI DI PATOLOGIA GENERALE ONCOLOGIA MOLECOLARE Casa Editrice:Medical Books Volume:UNICO Anno Edizione:2016 Numero Edizione:III ISBN:9788880341024

### SYLLABUS

Hrs	Frontal teaching
6	INTRODUCTION ABOUT THE STUD OF TUMORS: TUMOR DEFINITION AND GENERAL CHARACTERISTICS OF MECHANISMS REGULATING TUMOR PROGRESSION; BENIGNE AND MALIGN TUMORS; NOMENCLATURE AND CLASSIFICATION OF THE TUMORS; TUMOR GRADATION; CLINICAL AND PATHOLOGICAL CLASSIFICATION OF THE TUMORS ACCORDING TO THE TNM SYSTEM; STADY OF THE TUMOR, CYTOLOGICAL DIAGNOSIS OF THE TUMORS; ADDITIONAL DIAGNOSTIC METHODOLOGY.

## SYLLABUS

Hrs	Frontal teaching
7	TUMOR GENETICS; THE CARCINOGENIC RISK; ONCOGENES: DEFINITION OF ONCOGENES; THE ONCOGENES FAMILY AND THEIR PRODUCTS; ONCOGENES CODING FOR GROWTH FACTORS; ONCOGENES CODING FOR PROTEINS RELATED TO GROWTH FACTOR RECEPTORS; ONCOGENES CODING FOR CYTOPLASMATIC PROTEINKYNASES; ONCOSUPPRESSORS: DEFINITION OF ONCOSUPPRESSORS GENES; RB1 GENE AND ITS ROLE IN THE RETINOBLASTOMA; BRCA1 AND BRCA2 GENES INVOLVED IN BREAST CANCER; GENES NF1 AND NF2 AND THE MAIN FUNCTIONS OF THEIR PRODUCTS; THE GENE FAP INVOLVED IN THE FAMILY ADENOMATOS POLYPHOSIS AND ITS MAIN ROLES, WNT AND FUNCTIONS IN THE SELF-RENEWAL.
6	PROTEOMICS AND THEIR DIAGNOSTIC APPLICATIONS; WESTERN BLOT; IMMUNOHISTOCHEMISTRY; IMMUNOFLUORESCENCE; FLOW CYTOMETRY AND CELL SORTING.
6	MOLECULAR BIOLOGY ASSAYS AND THEIR USE IN CLINICAL PRACTICE; PCR; REAL-TIME PCR; DIGITAL PCR; NEXT GENERATION SEQUENCING.
5	IN VITRO AND MURINE MODELS FOR THE STUDY OF TUMORS; IMMORTALIZED AND PRIMARY TUMOR CELL LINES (ORGANOIDS); IMMUNOCOMPROMISED MICE; IN VITRO AND IN VIVO TUMORIGENIC ASSAYS: PRO ET CONTRA; CLONOGENIC AND SPHERE FORMATION ASSAY; SUBCUTANEOUS/ORTHOTOPIC/INTRASPLENIC/SUBRENAL CAPSULE/INTRACAUDAL INJECTION ASSAY.