

General Information	BACELOR DEGREE IN BIOTECHNOLOGIES
Title of the subject	Cytology with laboratory of microscopic techniques
Degree Course (class)	Course common to degree courses Medical and Pharmaceutical Biotechnologies L-2) and Industrial and Agri-Food Biotechnologies (L-2)
ECTS credits	4
Compulsory attendance	yes
Language	italian
Academic year	2020/2021

Subject Teacher		
Name and Surname	Giacomina Brunetti	
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Place and time of reception	Friday 9.30-11.30 Section of Human Anatomy and Histology "Rodolfo Amprino", Policlinico, Bari	
ECTS credits details	Discipline sector (SSD)	Area
	BIO/17	Similar

Study plan schedule	Year of study plan		Semester	
	I		I	
Time management	Lessons	Laboratory	Exercises	Total
CFU	3	1		4
Total hours	75	25		100
In-class study hours	24	12		36
Out-of-class study hours	51	13		64

Syllabus	
Prerequisites / Requirements	NO
Expected learning outcomes (according to Dublin descriptors)	
Knowledge and understanding	Acquisition of knowledge on cell morphology and structure, cell organelle functions, and cell division.
Applying knowledge	Microscopy and main techniques used for the morphological study of cells
Making informed judgments and choices	Students acquire autonomy in the use of light microscope and in both morphological and structural evaluations of the cell.
Communicating knowledge	Express yourself using the specific terminology of Cytology
Capacities to continue learning	Examination test with positive result
Study Program	

Content	<p>Part I</p> <p>General organization of the cell: shape, size and inorganic and organic components.</p> <p>General principles of optical and electronic microscopy.</p> <p>Main techniques for the preparation of biological preparations and staining methods for the study of the cell and its organelles.</p> <p>Differences between prokaryotic and eukaryotic cell; animal and plant cells.</p> <p>Part II</p> <p>Cell wall and plasma membrane organization.</p> <p>Cytoskeleton, cellular mobility and intercellular animal and plant junction systems.</p> <p>Intracellular organelles: nucleus, endoplasmic reticulum, ribosomes, Golgi apparatus, lysosomes, mitochondria, chloroplasts and peroxisomes.</p> <p>Cell cycle, mitosis and meiosis</p> <p>Laboratory activities of microscopic techniques:</p> <p>Laboratory 1: Staining of fibroblast line cells (commercial line WI-38) with toluidine blue.</p> <p>Laboratory 2: Staining of fibroblast line cells (commercial line WI-38) with hematoxylin and eosin.</p> <p>Laboratory 3: Light microscopic observation of cells previously stained with toluidine blue and hematoxylin/eosin.</p> <p>Laboratory 4: Fluorescence microscopic observation of cells stained with antibody specific for the detection of actin microfilaments.</p> <p>Laboratory 5: Light microscope observation of microbiological preparations that have been previously subjected to gram staining.</p>
Bibliography and textbooks	<p>L'essenziale di biologia molecolare e della cellula: Alberts ed. Zanichelli</p> <p>Biologia cellulare e molecolare : G. Karp ed EdiSES</p>
Notes to textbooks	
Teaching methods	Power Point presentations and movies. Laboratory activities
Assessment methods (oral, written, ongoing assessment)	Written assessment
Evaluation criteria (describe criteria for each of the above expected outcomes)	Passing the written test is an indication of knowledge of the morphology and structure of the cell, function of organelles, laboratory exercises, and knowledge of specific terminology associated with the subject.
Further information	