



UNIVERSITÀ DI PAVIA

Anno Accademico 2017/2018

HISTOLOGY	
Enrollment year	2016/2017
Academic year	2017/2018
Regulations	DM270
Academic discipline	BIO/17 (HISTOLOGY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOTECHNOLOGY
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	(01/03/2018 - 14/06/2018)
ECTS	3
Lesson hours	24 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	RIVA FEDERICA - 3 ECTS
Prerequisites	Basics Elements of Cytology, Chemistry, Physics and Biochemistry
Learning outcomes	At the end of the course the student will have to know: - the methods and tools of morphological investigation (including the basics of some technical procedures, i.e. histochemistry and immunohistochemistry), to determine the functional characteristics of different cellular and subcellular components; - cells and tissues morphology of the human body and their structural and ultrastructural organization; - the relationship between structure and cell function inside the tissues - cell populations and their differentiation, stem cells and their behaviour, the mechanisms of tissues to self renewal and regenerate
Course contents	Methods and tools for morphological, cytological and histological

	investigation: - tools of morphological investigation: THE MICROSCOPE (optical and electron microscope, confocal and in fluorescence, ...) - Preparation of the biological sample: fixation, inclusion, cutting, staining processes - Histological staining of a "common histological slide"; histochemical and immunohistochemical reactions. Histology: origin and nature of tissues; from stem cells to cell differentiation. Definition of tissue, organ, apparatus. Cell cohesion and communication (junctions and basal surface). Classification and description of morphofunctional features, emphasizing for each tissue the important and peculiar correlations STRUCTURE-FUNCTION. - EPITHELIAL tissues (in particular, epithelials of coating and glands), - CONNECTIVE TISSUE (blood, lymph, cartilage, bone, adipose tissue), - MUSCULAR TISSUE (Smooth muscle, skeletal muscle, cardiac muscle), - NERVOUS TISSUE. For all tissues, morphological organization and histarchitecture are described in relation to physiological aspects and specific cytological activities. Also refer to the presence in adult tissue of cell niches with staminal characteristics.
Teaching methods	Frontal lectures of the teacher. At the student's request, the lessons can be supported by the single observation with the optical microscope of histological slides of the analyzed tissues during the lesson. These are voluntary guided exercises to learn to describe a histologic slide, in co-presence of the teacher.
Reccomended or required readings	- Istologia, Ross M.H., Casa Editrice Ambrosiana - Citologia ed Istologia, Casasco E. La Goliardica pavese - Istologia, Monesi V. et al. Piccin - Citologia ed Istologia funzionale, Calligaro A. Edi.ermes - Istologia, Rosati P. et al. Edi.ermes -Istologia, Junqueira. Piccin
Assessment methods	Written test
Further information	no content
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile