



VEGETAL AND ANIMAL CELL BIOLOGY

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOTECHNOLOGY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	1st semester (05/10/2020 - 14/01/2021)
ECTS	9
Language	Italian

The activity is split

507370 - ANIMAL CELL BIOLOGY

500798 - PLANT CELL BIOLOGY



ANIMAL CELL BIOLOGY

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOTECHNOLOGY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	(05/10/2020 - 14/01/2021)
ECTS	6
Language	
Prerequisites	Basic knowledge of the structure of biological macromolecules and of the function of cell organelles.
Learning outcomes	To stimulate the study of the cell substructures from morphological, functional and molecular prospective with constant recall of the chemical processes involved. To provide students know-how and reasoning strategies for identifying potential subjects for the development of biotechnological applications.
Course contents	Biological macromolecules: proteins, nucleic acids, carbohydrates, lipids. Role of covalent and non-covalent bonds for macromolecule structure. Structure and function of cellular structures: plasma membrane, endomembrane system (rough and smooth endoplasmic reticulum, ribosomes, Golgi apparatus, endocytosis and exocytosis, lysosomes). Anaerobic and aerobic metabolism: glycolysis, mitochondria, peroxisomes. Cytoskeleton and cell motility (microfilaments, microtubules, intermediate filaments). Eukaryotic cell nucleus (nuclear

envelope, nuclear lamina, nuclear pores, chromatin, nucleolus). Cell reproduction (mitosis, meiosis). Practical demonstrations (optional): Elements of Histology. Observation of tissue slides under the optical microscope

Teaching methods

Lectures and optional practical demonstrations at the optical microscope

Reccomended or required readings

Equivalent textbooks:

- Il Mondo della Cellula, Becker - Kleinsmith - Lewis – Editore: PEARSON EDUCATION 8a edizione, 2014, ISBN: 978-88-6518-237-6
 - Biologia Cellulare e Molecolare - Concetti ed Esperimenti, Gerald Karp - 6a ed., EDISES. (ISBN: 9788879598637).
 - La Cellula. Un Approccio Molecolare. G.E. Cooper, R.E. Hausman, Piccin, 2012- (ISBN: 978-88-299-2133-1).
- Dedicated site of the lecturer with supplementary material.

Assessment methods

Written examination.

Further information

With the use of collaborator to didactic, program revision, clarification of doubts and exam preparation.

The activity is split

507370 - **ANIMAL CELL BIOLOGY (SURNAMES A-K)**

507370 - **ANIMAL CELL BIOLOGY (SURNAMES L-Z)**



PLANT CELL BIOLOGY

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOTECHNOLOGY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	(05/10/2020 - 14/01/2021)
ECTS	3
Language	Italian

The activity is split

500798 - PLANT CELL BIOLOGY (SURNAMES A-K)

500798 - PLANT CELL BIOLOGY (SURNAMES L-Z)