SCHEDULE AND TOPICS
SUBJECT: CYTOPHYSIOLOGY
2024/2025

Field of study: Medicine, English Division; Year of study: Ist; 40h = 10h lectures + 30h classes.

LECTURES **THURSDAY, 15:00-16:30; Library UWM, room 306**		
	Date	**Subject**
1.	**10.10.2024**	Structure and dynamics of biological membranes. Transmembrane transport and its mechanisms. Multidrug resistance.
2.	**17.10.2024**	Cell nucleus. Chromatin structure and epigenetics. Regulation of gene expression. Mechanisms of mitosis and meiosis. Nondisjunction.
3.	**24.10.2024**	The cell cycle and its control mechanisms. Cyclins, cyclin-dependent kinases, cell cycle checkpoints. Protoncogenes and tumor suppressor genes.
4.	**07.11.2024**	Cell growth and differentiation. Intercellular communication. Membrane and intracellular receptors. Signal transduction pathways.
5.	**14.11.2024**	Stem cells. Bone marrow transplantation. Aspects of undifferentiated cell therapy. Regenerative medicine.

PRACTICAL CLASSES Microscopic Laboratory (rooms No. 5 and 2), Department of Human Histology and Embryology, Collegium Anatomicum, 30 Warszawska Street			
	Date	**Subject**	**Range of classes**
1.	04.10.2024 07.10.2024	Histology and its methods. Light and electron microscopy. Optical and digital microscopic imaging techniques. Immunohistochemistry.	JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 1 + page 525
2.	11.10.2024 14.10.2024	Protruding from the apical surfaces of epithelial cells. Cytoskeleton. Cell junctions. Adhesion molecules. Basement membrane. Extracellular matrix. Vesicular transport: endocytosis, phagocytosis, transcytosis end exocytosis.	Lecture 1; JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 2 and 3. Chandar, Viselli, 2018, ,,Cell and Molecular Biology" Lippincott Illustrated Reviews 2nd ed. pages: 11-27, 31-39, 40-51, 145-174.
3.	18.10.2024 21.10.2024	Cell nucleus, chromatin and nucleolus. Ribosomes and rough endoplasmic reticulum., translation. Golgi apparatus, protein modification and secretion. Regulation of intracellular protein turnover. Cell secretion and its regulation. Protein degradation: proteasomes and lysosomes. Cytoplasmic inclusions.	Lecture 2; JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 2 and 3. Chandar, Viselli, 2018, ,,Cell and Molecular Biology" Lippincott Illustrated Reviews 2nd ed. pages: 55-61, 66-75, 102-114, 127-141.
4.	04.11.2024 08.11.2024	Peroxisomes. Reactive oxygen species. Mitochondria. Changes in the energy level of the cell. Apoptosis and necrosis.	Lecture 3; JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 2 and 3. Chandar, Viselli, 2018, ,,Cell and Molecular Biology" Lippincott Illustrated Reviews 2nd ed. pages: 57-59+61, 204-219, 221-229, 231-242.
5.	06.11.2024 10.11.2024	Cell differentiation. Terminally differentiated cells.	Lecture 4; JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 3. Chandar, Viselli, 2018, ,,Cell and Molecular Biology" Lippincott Illustrated Reviews 2nd ed. pages: 2-9, 176-200.
6.	15.11.2024 18.11.2024	Inflammatory response cells: B lymphocyte, T lymphocyte, phagocytes, mast cells. Cytophysiology and development of the local inflammatory response, diapedesis. Macrophag-fibroblast interaction	Crediting the missed classes and short tests.
TC	**05.12.2024**	**Theoretical colloquium (written)**	Lectures 1-5; Seminars 1-6; JUNQUEIRA'S Basic Histology, Text & Atlas, 15e_A. L. Mescher: Chapter 1, 2 and 3 Chandar, Viselli, 2018, ,,Cell and Molecular Biology" Lippincott Illustrated Reviews 2nd ed. pages as above.
ATC1	**12.12.2024**	**Additional theoretical colloquium 1 (written)**	
ATC2		**Additional theoretical colloquium 2 (written)**	