

*Затверджено на засіданні
кафедри нормальної фізіології
Протокол № 1 від 29 серпня 2019 року*

TOPIC'S PLAN
of lectures on the course of
«Molecular physiology and biotechnology for modern medicine»
for 3-nd grade English medium students of Medical Faculty,

No	Theme	Hours	Date	Lector
1.	Molecular physiology and its principal problems.	2	05.09.19	Prof. Zayachkivka O.S.
2.	Cytokines – new class of hormone-like polypeptide regulators of cellular functions. Cell receptors. Intracellular signalization.	2	12.09.19	Prof. Zayachkivka O.S.
3.	Cell cycle, its structure and regulation. Physiological cell “death” in the multi-cellular eukaryotic organisms.	2	19.09.19	Prof. Stoyka R.S.
4.	Tumor cell growth and cancer.	2	26.09.19	Prof. Stoyka R.S.
5.	Regulation of gene expression at different levels. Genetic and epigenetic information during processes of biological development.	2	03.10.19	Prof. Stoyka R.S.
	Total	10 hrs		

Head of the Physiology Department

Prof. Zayachkivka O.S., MD PhD, DSc

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TOPIC'S PLAN
of practical lessons on the course of
«Molecular physiology and biotechnology for modern medicine»
for 3-nd grade English medium students of Medical Faculty,

No	Theme	Hours
1.	Molecular physiology of functioning of nervous system. Stress reactions. Aging.	2
2.	Molecular physiology of functioning of endocrine and cardio-vascular systems.	2
3.	Molecular physiology of digestion. Molecular mechanisms of liver functioning.	2
4.	Bio-medical and ethical problems of isolation and application of stem cells.	2
5.	Nanobiotechnologies: definitions, methods and perspectives of application. Bio-sensors: principles of development and bio-medical application.	2
	Total	10 hrs

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TOPIC'S PLAN
of independent students work (ISW) on the course
«Molecular physiology and biotechnology for modern
medicine» for 3-nd grade English medium students of
Medical Faculty,

No	Theme	Hours
1.	Autophagy. Un-programmed cell “death” (necrosis).	10
2.	Chemical and viral carcinogenesis: general characteristics.	10
3.	Family of transforming growth factor type-beta: representatives and their role in disease pathogenesis.	10
4.	Secreted and membrane proteins – application at targeted protein localization.	10
5.	Molecular-genetic mechanisms in diabetes development, endothelial dis-functions and calcium metabolism.	10
6.	Cytokines (growth factors) in paracrine-autocrine regulation at atherosclerosis.	10
7.	Stem cells: principal sources and methods of isolation.	10
	Total	70 hrs

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