

Discussed and confirmed  
on the methodical council of the department  
January 19, 2023.

**HISTOLOGY INDEPENDENT WORK**  
**on discipline “Histology, Cytology and Embryology”**  
**for students of Faculty of General Medicine, 1<sup>st</sup> year,**  
**Spring semester. Academic year 2022-2023.**

| <b>№</b> | <b>Topic</b>                                                                                                                                                                        | <b>Amount of hours</b> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1        | Histology in Ukraine. Research methods in histology. Histological techniques.                                                                                                       | 4                      |
| 2        | Structural bases of transport through cell membrane. Mechanisms of reception. Structural bases of cytoprotection.                                                                   | 6                      |
| 3        | Mitosis and Meiosis. Cell reaction to external stimuli.                                                                                                                             | 4                      |
| 4        | Cleavage. Duration, localization, dark and light blastomeres. Blastocyst. Embryoblast. Embryonic stem cells.                                                                        | 4                      |
| 5        | The biological processes, which underlie the development of the embryo: induction, determination, division, cell migration, growth, differentiation, cell interaction, destruction. | 4                      |
| 6        | <b>Preparation for final control of the Summary lesson 1.</b>                                                                                                                       | 6                      |
| 7        | General principles of tissue organization. Epithelium as the leading component of histo-hematogenous barriers. Epithelial stem cells.                                               | 4                      |
| 8        | Thrombus formation. Stages and mechanisms.                                                                                                                                          | 4                      |
| 9        | Leukocytes. Mechanisms of adhesion, migration and killing of microorganisms. Interaction of blood cells and connective tissue during inflammation.                                  | 4                      |
| 10       | Reparation of loose connective tissue. Regulation of volume and composition of matrix of connective tissue.                                                                         | 4                      |
| 11       | Role of connective tissues with special properties in the development of autoimmune inflammatory processes.                                                                         | 4                      |
| 12       | <b>Preparation for final control of the Summary lesson 2.</b>                                                                                                                       | 6                      |
| 13       | Articular cartilage.                                                                                                                                                                | 4                      |
| 14       | Bones' rebuilding. Regeneration of bone tissue.                                                                                                                                     | 4                      |
| 15       | Muscle as organ. Muscles' regeneration. Histophysiology of locomotor apparatus.                                                                                                     | 4                      |
| 16       | Nerve endings. Nervous-muscle spindles.                                                                                                                                             | 4                      |
| 17       | <b>Preparation for final control of the Summary lesson 3.</b>                                                                                                                       | 6                      |
| 18       | Development of cardiovascular system. Morphological bases of neurohumoral regulation of blood vessels activity.                                                                     | 4                      |
| 19       | Development of endocrine glands. Diffuse endocrine system. Дифузна ендокринна система. Trans- and parapituitary regulation.                                                         | 4                      |
| 20       | Embryogenesis of hematopoietic organs. Cellular bases of nonspecific immunity. Cellular bases of the reactions of cell-mediated and humoral immunity                                | 4                      |
| 21       | <b>Preparation for summary lesson #4.</b>                                                                                                                                           | 6                      |
| 22       | Development of nervous system.                                                                                                                                                      | 4                      |
| 23       | Regeneration of nerves.                                                                                                                                                             | 4                      |
| 24.      | Preparation for credit lesson.                                                                                                                                                      | 5                      |

**In total 105 hours.**

**Chief of the Department of Histology and Embryology,**  
**Assoc.Prof.**  
**Deputy for Academic work,**  
**Assoc. Prof.**

**Ilena Chelpanova, Ph.D., M.D.**

**Olga Yuzych, PhD**