

APPROVED

Head of Physiology and  
Pathophysiology Department  
with course of Medical Biology



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**Calendar and Thematic plan**  
**PRACTICAL CLASSES OF PHYSIOLOGY**  
**for students of SSU Medical Institute**  
**in speciality I2 - "MEDICINE"**  
**for the autumn semester of the 2026-2027 academic years**

| №   | Themes of practical classes                                                                                        | Hours |
|-----|--------------------------------------------------------------------------------------------------------------------|-------|
| 1.  | The subject and tasks of physiology.                                                                               | 2     |
| 2.  | The main stages of the development of physiology. Methods of physiological research.                               | 2     |
| 3.  | Functional properties of cell membranes.                                                                           | 2     |
| 4.  | Resting potential of nerve and muscle fibers.                                                                      | 2     |
| 5.  | Action potential of nerve and muscle fibers.                                                                       | 2     |
| 6.  | Preparation of a neuromuscular preparation.                                                                        | 2     |
| 7.  | Mechanisms of electrical stimulation of excitable structures.                                                      | 2     |
| 8.  | Study of bioelectric phenomena in living tissues.                                                                  | 2     |
| 9.  | Conduction of excitation along nerve and muscle fibers.                                                            | 2     |
| 10. | Calculation work from the section "Electrophysiology".                                                             | 2     |
| 11. | Contraction of skeletal and smooth muscles.                                                                        | 2     |
| 12. | Study of the main characteristics of muscle contraction.                                                           | 2     |
| 13. | Solving situational tasks from content module 1 "Introduction to physiology. Physiology of excitatory structures". | 2     |
| 14. | <b>Final lesson from content module 1 "Introduction to physiology. Physiology of excitatory structures".</b>       | 2     |
| 15. | General patterns of nervous regulation of functions.                                                               | 2     |
| 16. | Analysis of the reflex arc.                                                                                        | 2     |
| 17. | Excitation and inhibition in the central nervous system.                                                           | 2     |
| 18. | Study of inhibition of spinal reflexes.                                                                            | 2     |
| 19. | The role of the spinal cord in the regulation of body functions.                                                   | 2     |
| 20. | Study of clinically important spinal reflexes in humans.                                                           | 2     |
| 21. | The role of the hindbrain in the regulation of body functions.                                                     | 2     |
| 22. | The role of the midbrain and basal nuclei in the regulation of body functions.                                     | 2     |
| 23. | The role of the cerebellum, thalamus and hypothalamus in the regulation of body functions.                         | 2     |
| 24. | Determination of functional asymmetry of the cortex of the large hemispheres.                                      | 2     |
| 25. | Nervous regulation of vegetative functions.                                                                        | 2     |
| 26. | Research of autonomic tone and autonomic reactivity in humans.                                                     | 2     |

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|--------------|------------------------------------------------------------------------------------------------------------------|-----------|
| 27.          | Calculation work and solution of situational tasks from content module 2 "Nervous regulation of body functions". | 2         |
| 28.          | <b>Final lesson from content module 2 "Nervous regulation of body functions".</b>                                | 2         |
| 29.          | General patterns of humoral regulation of vegetative functions.                                                  | 2         |
| 30.          | Hypothalamic-pituitary system.                                                                                   | 2         |
| 31.          | The role of hormones in the regulation of physical and mental development.                                       | 2         |
| 32.          | The role of hormones in the regulation of sexual development.                                                    | 2         |
| 33.          | The role of hormones in the regulation of homeostasis.                                                           | 2         |
| 34.          | The role of hormones in regulating the body's adaptation to stress factors.                                      | 2         |
| 35.          | Solving situational tasks from content module 3 "Humor regulation of body functions".                            | 2         |
| 36.          | <b>Final lesson from content module 3 "Humoral regulation of body functions".</b>                                | 2         |
| 37.          | Sensor systems. Study of the somatosensory analyzer.                                                             | 2         |
| 38.          | Visual analyzer.                                                                                                 | 2         |
| 39.          | Auditory and vestibular analyzers.                                                                               | 2         |
| 40.          | Study of the properties of visual, auditory and vestibular analyzers.                                            | 2         |
| 41.          | Physiological bases of behavior.                                                                                 | 2         |
| 42.          | Higher nervous activity of a person.                                                                             | 2         |
| 43.          | Study of cognitive processes and types of higher human nervous activity.                                         | 2         |
| 44.          | Individual work of students from module 4 "Physiology of analyzers and HNA".                                     | 2         |
| 45.          | <b>Final lesson from content module 4 "Physiology of analyzers and HNA ".</b>                                    | 2         |
| <b>Total</b> |                                                                                                                  | <b>90</b> |