

**Abstract of the working program on normal physiology  
for second-year students of the Faculty of Medicine  
(the variable part)**

1. **Purpose of the discipline:** to master knowledge of the morphofunctional organization of the nervous system, the principles of coordination activities of central nervous system, the interaction of the body with the external environment.
2. **The place of discipline in the structure of the MEP:** The academic discipline refers to the natural science cycle of disciplines.
3. **Requirements for the results of the discipline:** The process of studying the discipline is aimed at the formation and development competencies: PC-21

As a result of studying the discipline, the student must

***Know:***

- the principles of organization and functioning of the central nervous system (CNS) in human and other mammals, cephalization of functions in the process of evolution;
- the role of various departments and structures of the central nervous system in the regulation of somatic and visceral functions of the body. Reflex arcs with visceral and somatic components;
- individual features of the organization and reflex activity of the autonomous nervous system, its participation in the formation of holistic forms of behavior;
- the basic morpho-functional features of the organization of various departments sensory systems;
- forms of manifestations of higher nervous activity (HNA) in humans, classification and characteristics of types of HNA, variants of interhemispheric asymmetry and its meaning in activity of the physician;
- mechanisms of formation of the conditioned reflex and its inhibition, role in the clinical practice, components of the functional system of the behavioral act;
- concept and classification of pain; features of the morpho-functional organization of nociceptive and antinociceptive systems;
- mechanisms and features of the formation of basic functional systems (BFS) of the organism (maintenance of constancy of a level of nutrients in a blood, arterial pressure, temperature of the internal environment, preservation of the integrity of the organism, etc.).

***Be able to:***

*Use knowledge about:*

- methodological approaches (analytical and systemic) for understanding the regularities of the whole organism;
- the theory of functional systems for understanding the mechanisms of self-regulation of homeostasis and formation of a useful result in adaptive activities;
- properties and functions of various body systems in the analysis of the formation of functional systems of the healthy person's organism;

- mechanisms for the formation of specific and integrative functions, their dependence on the factors of the environment and the functional state of the organism;
- types and mechanisms of formation of manifestations of higher nervous activity at analysis of the organization of the BFS of a healthy person, for understanding the mechanisms of the mental activities; different states of the brain, purposeful human behavior;

*Analyze:*

- patterns of functioning of human sensory systems;
- features of the higher nervous activity of a person;
- patterns of activity of different body systems for different functional states;

*Carry out investigations of:*

- reflex activity of the nervous system and vegetative reactivity;
- functions of sensory systems;
- pain sensitivity;
- higher mental functions;
- individual-typological characteristics of a person;

***Own:***

Methods of determining of the HNA types.

**4. The total complexity of the discipline:** 2 credit units (72 hours)

**5. Semesters:** 3 and 4.

**6. The main sections of the discipline:**

Physiology of the central nervous system

Physiology of sensory systems

Pain Physiology

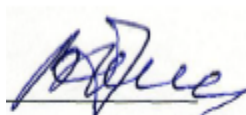
Physiology of higher nervous activity

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