

# **Assessment of the functional state of the human body**

**Teacher: PhD Telina Evelina Nicolaevna**

**Building, Department, classroom #** Universitetskaya, 13, Department of Normal Physiology, 310 - 315

## **Contact details:**

- Lecturer - telephone number: 89600365142 (PhD Telina Evelina Nicolaevna)  
E-mail address: evelinatelina@mail.ru
- Teacher - telephone number: 89600365142 (PhD Telina Evelina Nicolaevna)  
E-mail address: evelinatelina@mail.ru
- Office and working hours: Universitetskaya, 13, 325, 327 (9-17)

**Total hours – 72 h:**

**Lectures: 10 h;**

**Practical classes: 30 h;**

**Independent work – 32 h;**

**Control – credit**

## **Course description:**

**Lecture** is an oral presentation of particular branch of science or discipline by the teacher. It is usually held for the course of students at the same time.

**Workshop** is usually devoted to detailed study of specific topics and it is being held in each academic group separately. The workshop involves active participation of students in problem discussion. It requires preliminary preparation by the student.

**Practical training** is aimed to apply theoretical knowledge in practice. The skills are developed in problem solving process under the supervision of a teacher.

**Laboratory classes** contain experimental scientific research activities. It requires the use of special equipment, facilities and materials. To be held in teaching laboratories.

**Self-study** is work with the special literature or teaching materials (literary sources, video and audio material, multimedia programs and simulators) on the educational portal of the University <https://e.kazangmu.ru/course/view.php?id=1919>

## **Course objectives: The purpose of mastering the discipline**

The goals of mastering the **Assessment of the functional state of the human body** discipline are formation of systematic knowledge about the vital activity of the whole organism and its individual parts and about the main ways to assess the functional state of the body; formation the skills of interpretation of basic physiological principles and basic methods of physiological functions examination, which submitted to the activities of the all organism systems.

## **Tasks of the discipline:**

1. Research and awareness-raising activities:  
- independent analytical, scientific and research work;

- participation in the solution of individual research and scientific-applied tasks for the development of new methods and technologies in the field of pharmacy
- providing advice to specialists of medical organizations, pharmaceutical organizations and the public on the use of medicines;
- formation of patients' motivation to maintain health

### **Course topics:**

- Section 1. Assessment of physical state.
- Section 2. Physical examination methods: auscultation.
- Section 3. The functional state of the respiratory system.
- Section 4. Functional state of the heart.
- Section 5. Functional state of sensory systems.
- Section 6. Properties of the nervous system.
- Section 7. Functional states of a person.
- Section 8. Laboratory research methods.

### **Calendar plan of lectures**

#### **IV semester**

1. Electrocardiography.
2. The functional state of the respiratory system. Spirometry.
3. General properties of sensory systems. Visual perception.
4. Auditory, gustatory and olfactory perception.
5. Pain.

### **Calendar plan of practical classes**

#### **IV semester**

1. Assessment of physical condition and working capacity.
2. Auscultation of the heart. Heart Sounds.
3. Electrocardiography.
4. Auscultation of the lungs. Spirography. Peak fluometry.
5. Visual perception.
6. Auditory, gustatory and olfactory perception.
7. Properties of the nervous system. Brain asymmetry.
8. Pain.
9. Complete blood count, biochemical analysis of blood test. Urine analysis.
10. Control class.

### **Text books and required supplies:**

1. Ganong's Review of Medical Physiology. 26th Edition. MC Graw Hill. 2019. 1792p. ISBN-10: 978-1-26-012241-1.
2. Hall J. Guyton and Hall Textbook of Medical Physiology. 13rd Edition. Elsevier. 2016. 1046p. ISBN 13:9781455770052.
3. W., Boulpaep E. Medical Physiology. 3rd Edition. Elsevier. 2016. 1312p. eBook ISBN: 9780323391597
4. Educational portal course: Normal Physiology for faculty of General Medicine <https://e.kazangmu.ru/course/view.php?id=1919>

## **Evaluation and grading:**

Monitoring progress is carried by the end of each section (written papers/oral examination/test/abstracts/reports or others).

*Routine performance assessment* (homework, practical work, tests during classes, etc.) is carried out using 10 point scale, where 0-6 – “poor”, 7 – “satisfactory”, 8 – “good”, 9 – “excellent” and 10 – “splendid”. Unsatisfactory mark during routine performance evaluation or absenteeism (including lectures) is considered to be a student academic debt. In order to rework the debt the student can attend missed/failed class with a different academic group (the teacher is to be notified in advance) or to do the rework using e-learning or distance technologies or in other ways determined by the teacher. Abandoned academic debt is leading to dismissal from the University.

*Midterm assessment* is a form of knowledge and skills evaluation on the discipline or on a part of it (test/oral examination/situational task). Grading: 0–69 points – noncredit; 70–100 points – credit. Student is given not more than 2 attempts to pass midterm assessment within one year. Failure is leading to dismissal from the University.

*Control class* is held in forms of MCQ test (one correct answer). Grading: 0–69 – “poor”, 70-79 – “satisfactory”, 80-89 – “good”, 90-100 – “excellent”.

Overall student rating is build up from class attendance, module and test results, midterm assessment results.

## **Classroom rules:**

- Be respectful
- Be careful with equipment
- Be disciplined
- Be prepared for the classes
- Be involved, do not hesitate to ask questions
- Look professional: you have to wear clean white coat and change shoes
- Eating is allowed only during brakes
- Using phone is allowed only during brakes

## **EVALUATION of knowledge, abilities and skills**

### **- MCQ Test**

#### Example:

1. The "P" wave on the ECG represents: a) atrial depolarization; b) atrial repolarization; c) ventricular depolarization; d) ventricular repolarization.

Evaluation criteria: The score on the test is set in proportion of correct answers: 90-100% - score "excellent" 80-89% - score "good" 70-79% - score "satisfactory" Less than 70% of correct answers – score "unsatisfactory".

### **- Oral examination**

Example:

"Refractive abnormalities of the eye", "Phonocardiography"

Evaluation criteria: "Excellent" (90-100 points) – The student is fully proficient in the basic material, possesses additional information, is able to analyze physiological processes and mechanisms, reveal their significance and interrelation with other organs and systems. "Good" (80-89 points) – The student knows the basic material, but does not fully possess additional information. The answer contains minor errors in the logical sequences. "Satisfactory" (70-79 points) – The student partially owns the material, makes mistakes in terminology, logical sequences, physiological mechanisms, the significance of physiological processes and their relationship with other organs and systems. "Unsatisfactory" (0-69 points) – The student has scattered knowledge with significant errors in physiological processes and mechanisms, makes mistakes in terminology, cannot analyze the significance of physiological processes.

**- Reports**

Example:

"Comprehensive assessment of health, physical development, physique and fitness", "Theories of color perception. Color vision disorders"

Evaluation criteria: "Excellent" (90-100 points) – the report fully reveals the topic, the student tells, practically without looking at the text and answers all additional questions. "Good" (80-89 points) – the report reveals the topic, but requires additions, the student tells based on the text, but without reading it out and answers all additional questions: "Satisfactory" (70-79 points) – the report reveals the topic, but requires additions, the student cannot answer most of the additional questions, partially reads the text during the story. "Unsatisfactory" (0-69 points) – the report does not disclose the topic, the student cannot answer most of the additional questions, reads out the text.

**- Case-study**

Example:

1. "On the patient's ECG, the distance between adjacent "R" waves is 1.2 seconds. The QRS complex follows the "P" wave. Count the heart beat rate and make a conclusion about the pacemaker." Answer: Heart rate =  $60 : 1.2 = 50$  beats/min. The patient has bradycardia, sinus rhythm.

Evaluation criteria: "Excellent" (90-100 points) – the correct answer is given, the essence and mechanisms of physiological processes are explained, their significance for the normal functioning of organs and systems is revealed, if necessary, an analysis of physiological constants and laboratory results is given, the student uses additional information. "Good" (80-89 points) – a short correct answer is given, the essence and mechanisms of physiological processes are explained, their significance for the normal functioning of organs and systems is revealed, if necessary, an analysis of physiological constants and laboratory results is given, the student does not use additional information. "Satisfactory" (70-79 points) – a short answer to the question is given, mistakes are made, the essence of physiological processes is not explained, an incomplete analysis of physiological constants and laboratory results is given. "Unsatisfactory" (0-69 points) – an incorrect answer is given, the problem is not solved.