



APPROVED
EMD decision

" 13 " 09 2021

Protocol No. 4

Chairman of the EMC, Vice-Rector,
candidate of pedagogical sciences,
associate professor Apezova D.U.



SYLLABUS by discipline

B.3.1.3. HISTOLOGY, EMBRYOLOGY, CYTOLOGY

For students of the educational program, higher professional education in the specialty 560001 "General Medicine" (5-year education) in the specialty "Doctor"

Type of study work	Total hours
Course	1,2
Semester	2,3
Number of weeks	31
Credits	7
<i>The total complexity of the discipline</i>	210
Classroom/practical studies (PS)	126/84
Student Independent Work (SIW)	84
Forms of control	
current control	Testing, oral questioning, written test
Frontier control	Testing
Midterm	Testing
Final control	exam
Semester rating by discipline:	Point-rating system

Information about the teacher of the academic discipline

Full Name	Yrysbayev Azamat Yrysbayevich
Post	Teacher
Academic degree	-
Academic title	-
Email address	Ryspadon@gmail.com
Location of the department (address)	KR, Bishkek, st. Shabdan Baatyr 4/4, floor 2
Telephone	+996772820xxx
Consultation hours	11.00-13.30

Characteristics of the academic discipline

The purpose of studying the discipline. Mastering knowledge: about the general patterns inherent in the cellular level of organization of living matter about the general patterns of organization of living matter inherent in the tissue level of organization about the principles of the development of living matter, histogenesis and organogenesis, the features of the development of the human embryo about the subtle (microscopic level) structure of body structures a person for further study of the essence of their changes in diseases and treatment.

Discipline Prerequisites

- Latin
- Biology with elements of ecology

Postrequisites of the discipline

- Basic pharmacology
- Proped therapy
- Endocrinology
- Hematology
- Occupational diseases
- Hospital therapy
- Outpatient pediatrics
- Fundamentals of Clinical Examinations in Internal Medicine
- Fundamentals of Clinical Examinations in Pediatrics

Learning outcomes of the discipline according to the RO GPP

The study of histology, embryology and cytology will contribute to the achievement of the RE of the HPE:

RE1 - Describe and distinguish between the normal structure (morphology) and function (physiology) of the body as a whole, organs and systems, as well as pathological changes that are observed in various diseases and conditions.

RE3 - Analyze the various causes (genetic, intrauterine, metabolic, toxic, microbiological, autoimmune, neoplastic, degenerative and traumatic) of disease and borderline conditions in the body.

PC-15 - able and ready to analyze the patterns of functioning of individual organs and systems, use knowledge of anatomical and physiological features, basic methods of clinical and laboratory examination and assessment of the functional state of the body of an adult and children, for the timely diagnosis of diseases and pathological processes.

Content of the discipline

№.№	Name of topics
1.	Introductory. History of the development of histology. microscopic technique (Lek)
2.	Cytology. Cells and non-cellular living structures. Cell inclusion organelles.
3.	Cell nucleus. Chromosomes. cell division (mitosis, amitosis, meiosis). sex cells. (Etc)
4.	The structure of the cell membrane. Membrane organelles of the cell. The structure of the kernel components. Mitosis, endomitosis (W)
5.	Fertilization. Cleavage and formation of the blastula. Types of gastrulation. (Wed)
6.	Fertilization. Cleavage and formation of the blastula. Types of gastrulation. (Wed)
7.	Differentiation of the mesoderm and the formation of axial organs, separation of the embryo from extraembryonic organs. (Lek)
8.	Differentiation of the mesoderm and the formation of axial organs, separation of the embryo from extraembryonic organs. (Lek)
9.	Stages of embryogenesis. Features of human emb. development. Extra-embryonic organs. placenta (Wed)
10.	Epithelial tissue (Lek)
11.	epithelial tissue. Exocrine glands (simple and complex), types of secretion. (Etc)
12.	Tissue differentiation (av)
13.	Exocrine glands (simple and complex), types of secretion. (Lek)
14.	Blood and lymph (Lek)
15.	Hematopoiesis (Pr)
16.	Connective tissue. Self-connective tissue (loose, dense). Connective tissue with special properties. (Etc)
17.	Cartilage tissue (PR) Bone tissue (R)
18.	Muscle tissue (PR) Nervous tissue (Pr)
19.	Nervous system (Lek)
20.	Morphofunctional maturity of CNS neurons (Md)

21.	Primary sensory organs Secondary-sense sense organs (Lek)
22.	The cardiovascular system Endocrine system (PR)
23.	Organs of hematopoiesis and immune defense (Pr)
24.	Diagnostic lesson (Wed)
25.	Oral cavity (tongue, salivary glands, teeth) (Lek)
26.	Tongue, salivary glands (Pr) Development and structure of the tooth (PR)
27.	The structure of the digestive tube (PR)
28.	Endocrine system, local endocrine apparatus of the digestive system (W)
29.	Liver and pancreas (Pr)
30.	Physiological regeneration of the liver. Endocrine apparatus of the pancreas (W)
31.	Respiratory system (R)
32.	Skin and its derivatives (Pr) Excretory system (PR)
33.	Functional maturity of the nephron. Theory of urination (cf)
34.	Male reproductive system (W)
35.	Features of the development of the reproductive system according to the female and male type (W)
36.	Female reproductive system (Ovary, menstrual-ovarian cycle, oviducts, uterus) (Pr)
37.	Endo- and exogenous factors influencing sexual development (av)
38.	Critical periods of human embryonic development (Cp)
39.	Placenta (Wed)

List of main and additional literature:

Main literature:

Karapats M. Fundamentals of microbiology, virology, immunology. Moscow: KnoRus, 2020

Additional literature:

1. Levinson U. Medical microbiology and immunology Author: Publisher: Laboratoriya znaniya Year: 2020.
2. Kochubinsky, V.V., Kanashkova, T.A., Chernoshey, D.A., Gavrilova, I.A. Microbiology, virology, immunology. BSMU, 2020.
3. Sboychakov V. B. Fundamentals of Microbiology, Virology, Immunology. M. 2017

Internet resources:

<http://www.edu.ru>
<http://www.medicina.ru>
<http://www.infectology.ru>
[http //www.journals.uchicago.edu/JAD/home.html](http://www.journals.uchicago.edu/JAD/home.html)

Monitoring and evaluation of learning outcomes.

The content of the rating system for assessing student performance

The rating assessment of students' knowledge in each academic discipline, regardless of its total labor intensity, is determined on a 100 (one hundred) - point scale and includes current, boundary, intermediate and final control.

The distribution of rating scores between types of control is established in the following ratio (according to the table of the score-rating system of assessments):

Form of control				
current (CC)*	boundary control (BC)**	mid-term exams (MC)***	Final /exam (FE)	Discipline Rating (RD)

0-100 points	0-100 points	0-100 points	0-100 points	0-100 points, with the translation of points into a letter designation
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Note:

* $TK(middle) = \frac{\sum_1^n \times point}{\sum_1^n}$, where n is the number of types of classroom and extracurricular work of students in the discipline;

**PK (middle) = $\frac{\sum_1^n credit \times point}{\sum_1^n credits}$, where n is the number of modules (credits) in the discipline;

***ПК (middle) = $\frac{\sum_1^n \times point}{\sum_1^n}$, where n is the number of intermediate controls (2 controls per semester: in the middle and at the end of the semester) by discipline;

****ИК – examination conducted at the end of the study of the discipline

;

*****РД = $\frac{TK_{cp} + PK_{cp} + ПК_{cp} + ИК}{4}$, the final rating of the results of all types of control at the end of the discipline;

GPA = $\frac{\sum_1^n \times балл}{\sum_1^n}$ where, n is the number of disciplines in the semester (for the past period of study).

A student who has not passed the current, boundary and intermediate controls to the final control (exam) is not allowed.

The current control is carried out during the period of classroom and independent work of the student on time according to the schedule, at the end of the study of the discipline, the average score of the current control (CC) is calculated. *Forms of current control can be:*

- testing (written or computerized);
- performance of individual homework assignments, abstracts and essays;
- student's work in practical (seminar) classes;
- various types of colloquia (oral, written, combined, express, etc.);
- control of performance and verification of reporting on laboratory work;
- visiting lectures and practical (seminar, laboratory) classes;
- Incentive rating (up to 10 points).

Other forms of current monitoring of results are also possible, which are determined by the teachers of the department and recorded in the work program of the discipline.

The frontier control is carried out in order to determine the results of the student's development of one credit (module) as a whole. *Frontier control* should be carried out only in writing, at the end of the study of the discipline, the average score of boundary control (BC) is calculated. As forms of *frontier control* of the training module, you can use:

- testing (including computer testing);
- interview with written fixation of students' answers;
- test.

Other forms of intermediate control of results are also possible.

Intermediate control (mid-term exams) is carried out in order to check the completeness of knowledge and skills in the material in the middle and end of the semester (2 times per semester) of studying the discipline, by the end of the study of the discipline, the average score of intermediate control (PCsr) is calculated, *forms of intermediate control (mid-term exams) can be:*

- testing (including computer testing);
- interview with written fixation of students' answers;
- test.

Other forms of intermediate control of results are also possible.

The final control is carried out during the session, by conducting an exam, it can be carried out in the following forms:

- testing (including computer testing);
- written exam (ticketing system).

Correspondence of the point-rating system of assessments used by the institute and the assessments of the European system for the transfer of credit units, labor intensity (ECTS)

Grade						Criterion
System of letters	digital system	Traditional system	Points (%)	Scored points (max - 100)	Evaluation by discipline without an exam	
A	4	5	95-100	95-100	Credited/ passed	"Excellent" - deserves a student who has shown a deep, systematic and comprehensive knowledge of the educational material, who freely performs practical tasks, who has mastered the recommended basic and additional literature on the discipline
A-	3,67		90-94	90-94		"Excellent" - deserves a student who has shown a deep, systematic and comprehensive knowledge of the educational material, who freely performs practical tasks, who has mastered the recommended basic literature on the discipline, but is not familiar with additional literature
B+	3,33	4	85-89	70-89		"Good" - exhibited to a student who has shown a systematic and comprehensive knowledge of the educational material, able to independently replenish and update this knowledge in the course of training, performing practical tasks, familiar with the main literature on the discipline
B	3,0		80-84			"Good" is given to a student who has shown a systematic and comprehensive knowledge of the educational material, who is able to independently replenish this knowledge in the course of training, performing practical tasks, but not fully familiar with the main literature on the discipline
B-	2,67		75-79			"Good" - is given to a student who has shown the systematic nature of knowledge in the discipline, who is able to independently replenish this knowledge in the course of training, performing practical tasks, but not fully familiar with the main literature on the discipline
C+	2,33		70-74			"Satisfactory" - is given to a student who does not have a systematic nature of knowledge in the discipline, who is not capable of independently replenishing and updating knowledge in the course of further education, performing practical tasks with errors
C	2,0	3	65-69	50-69		"Satisfactory" - is given to a student who made mistakes in completing assignments, but who has the necessary knowledge to eliminate them under the guidance of a teacher
C-	1,67		60-64			"Satisfactory" - is set to a student who made errors in the performance of tasks, but who has the possible knowledge to eliminate them under the guidance of a teacher
D+	1,33		55-59			"Satisfactory" - is set to a student who made errors in the performance of tasks, who does not have the necessary knowledge to eliminate them
D-	1,0		50-54			Satisfactory" - is given to a student who has made significant errors in the performance of tasks, who does not have the necessary knowledge to eliminate them
FX	0,5	2	25-49	Less of 50	not credited/not passed	"Unsatisfactory" - is set to a student who has not completed the task, does not have the necessary knowledge to eliminate them
F	0		0-24			"Unsatisfactory" - is set to a student who has not completed the task, does not have the necessary knowledge to eliminate them, even under the guidance of a teacher

Academic achievement requirements:

Attendance by students of all classroom classes without delay is mandatory.

In case of absence, classes are worked out in the order established by the dean's office.

If there are three passes, the teacher has the right not to allow the student to attend classes until the issue is administratively resolved.

If the absence of classes is more than 20.0% of the total number of classes, the student automatically enters the summer semester.

Note to the student:

- ✓ regularly review lecture material;
- ✓ Do not be late and do not miss classes;
- ✓ work off missed classes if you have permission from the dean's office;
- ✓ Actively participate in the classroom (individually and in groups;)
- ✓ timely and fully complete homework assignments;
- ✓ submit all assignments within the time specified by the teacher;

- ✓ independently study the material in the library and at home;
- ✓ timely and accurately fulfill the tasks of the teacher, individual tasks for the IWS to achieve learning outcomes;
- ✓ to master the basic and additional literature necessary for the study of the discipline;
- ✓ performing tasks, the student should not copy or reproduce the work of other students, scientists, practitioners, plagiarism;
- ✓ develop their intellectual and oratory skills;

In case of non-compliance with the requirements of the Memo, the student will be penalized in the form of deducting points (one point for each violated item).

If the requirements of the Memo are fully met, the student is encouraged in the form of an additional 10 points to the final control in the discipline.

Academic Integrity, Conduct and Ethics Policy:

- turn off your cell phone during class;
- Be polite;
- respect other people's opinions;
- formulate objections in the correct form;
- do not shout or raise your voice in the audience;
- independently complete all semester assignments;
- Eliminate plagiarism from your practice;

Methodical instructions.

It is recommended to organize the time required to study the discipline as follows:

When preparing for a practical lesson, you must first read the abstract with the teacher's explanations.

When performing exercises, you must first understand what you want to do in the exercise, then proceed to its implementation.

Literature work. The theoretical material of the course becomes more understandable when books are studied in addition to the abstract. After studying the main topic, it is recommended to perform several exercises.

Preparation for boundary and intermediate controls. In preparation for the boundary and intermediate control, it is necessary to study the theory: the definitions of all concepts before understanding the material and independently do several exercises.

Independent work of students is organized on all studied topics of each section. Independent work is carried out in the form of:

- work in Internet sites;
- work with basic and additional literature;
- fulfillment of written assignments;
- preparation of reports, abstracts, tables and posters on