

**AL-FARABI KAZAKH NATIONAL UNIVERSITY  
Higher School of Medicine  
Department of Fundamental Medicine**

**AFFIRM  
Dean of the Faculty**

\_\_\_\_\_  
**(signature)**

**Kalmatayeva Z.A.**

"\_\_\_\_\_" "\_\_\_\_\_" **2021**

**EDUCATIONAL AND METHODOLOGICAL COMPLEX OF DISCIPLINE**

MiF2203 "Normal structure and function of human body"

**Specialty "B086"**

**Educational program "General medicine"**

**Course – 2**

**Semester – 3**

**Number of credits – 11**

**Almaty 2021**

Educational and methodical complex of discipline was compiled by  
doctor of medical sciences, professor **Tashenova Gulnara**, doctor of medical sciences, professor  
**Yui Rudolf**, master of medical sciences **Kasenova Gulzhan**, master of medical sciences **Oralkhan  
Jebeke**, master of medical sciences **Seidinova Aigerim**, MD **Mulkibayeva Sholpan**, master of  
physical sciences **Nurtayeva Galiya**  
Based on the working curriculum in the specialty B086 General medicine

Considered and recommended at a meeting of the department fundamental medicine  
from " \_\_\_\_ " \_\_\_\_\_ 2021, protocol No. ...

Head of the department \_\_\_\_\_ Sarsenova L.K.  
(signature)

Recommended by the faculty methodical bureau  
" \_\_\_\_ " \_\_\_\_\_ 2021, protocol No.

Chairman of the method bureau of the faculty \_\_\_\_\_ Ualieva A.E.  
(signature)

**Al-Farabi Kazakh National University**  
**Higher School of Medicine**  
*Department of Fundamental Medicine*

**SYLLABUS**

Spring semester, academic year 2020-2021

**Academic course information**

Discipline's code	Discipline's title	Type	No. of hours per week			Number of credits	ECTS
			Lect.	Pract.	Lab.		
MiF2203	Normal structure and function of human body"	BD UC	5	6	0	11	11
Teacher of Anatomy and Physiology e-mail Phone number	Tastanbekova Aidana <a href="mailto:rahymberdikz@gmail.com">rahymberdikz@gmail.com</a> +77075590229 Kagarmanova Arai <a href="mailto:kagarmanovaaray@gmail.com">kagarmanovaaray@gmail.com</a> 87771405780 Yendibay Bagdat <a href="mailto:yendibay.bagdat@mail.ru">yendibay.bagdat@mail.ru</a> 87057147175 Aidarbekova Zhuldyz <a href="mailto:aidarbekova.zhuldyz@med-kaznu.com">aidarbekova.zhuldyz@med-kaznu.com</a> 87472416822 Aidasheva Balzhan <a href="mailto:aidasheva.balzhan@med-kaznu.com">aidasheva.balzhan@med-kaznu.com</a> 87019898509 Khassanova Almira <a href="mailto:khassanova.almira@med-kaznu.com">khassanova.almira@med-kaznu.com</a> 87075551599 Adai Mustafa <a href="mailto:adai.mustafa@med-kaznu.com">adai.mustafa@med-kaznu.com</a> 87071257377 Kassenova Gulzhan <a href="mailto:kassenova.gulzhan@med-kaznu.com">kassenova.gulzhan@med-kaznu.com</a> 87082800022 Seidinova Aigerim <a href="mailto:sedinova.aigerim@med-kaznu.com">sedinova.aigerim@med-kaznu.com</a> Kamzina Zarina <a href="mailto:kamzina.zarina@med-kaznu.com">kamzina.zarina@med-kaznu.com</a> 87474815541 Oralkhan Zhibek <a href="mailto:oralkhan.zhibek@med-kaznu.com">oralkhan.zhibek@med-kaznu.com</a> 87476206110 Marina Nyu, master of Medical Sciences <a href="mailto:nyu.marina@med-kaznu.com">nyu.marina@med-kaznu.com</a> 87074043181 Kondybayeva Aida	Office hours	According to the schedule				

	<a href="mailto:kondybayeva.aida@med-kaznu.com">kondybayeva.aida@med-kaznu.com</a> 87017167979 Sultanbaeyva Zhansaya <a href="mailto:sultanbayeva.zhansaya@med-kaznu.com">sultanbayeva.zhansaya@med-kaznu.com</a> 87023777735 Dauletkazina Akmaral <a href="mailto:dauletkazina.akmaral@med-kaznu.com">dauletkazina.akmaral@med-kaznu.com</a> 87024077427		
Teacher of histology e-mail Phone number	Dinara Sherelkhan <a href="mailto:Sherelkhandinara@gmail.com">Sherelkhandinara@gmail.com</a> +77085186525 Mulkitabeva Sholpan, Candidate of Medical Sciences <a href="mailto:mulkibayeva.sholpan@med-kaznu.com">mulkibayeva.sholpan@med-kaznu.com</a> 87073053507 Yespolayeva Aigerim <a href="mailto:yespolayeva.aikerim@med-kaznu.com">yespolayeva.aikerim@med-kaznu.com</a> 87013488207 Bolatbekova Gulden <a href="mailto:bolatbekova.gulden@med-kaznu.com">bolatbekova.gulden@med-kaznu.com</a> 87079585307	Office hours	According to the schedule
Assistant of Biophysics e-mail Phone number	Nurtayeva Galiya nurtayevagalyia2017@gmail.com +77014579108 Serikbolova Albina <a href="mailto:serikbolova.albina@med-kaznu.com">serikbolova.albina@med-kaznu.com</a> 87477041743 Umirbekova Zamzagul <a href="mailto:umirbekova.zamzagul@med-kaznu.com">umirbekova.zamzagul@med-kaznu.com</a> 87017155007	Office hours	According to the schedule

Academic presentation of the course	<p><b>Course type:</b> basic discipline of the university component, “Body structure and function in norm and pathology” module. The concepts of anatomy and physiology are exemplified by medical cases so as to engage students in analytical thinking, and promote independent, as well as collaborative, work on the study material.</p> <p><b>The aim of the course:</b> to teach how to apply knowledge of morphology (anatomy and histology) and physiology of organs and systems of the human body (respiratory, cardiovascular, hematopoietic, digestive, urinary, reproductive, endocrine, musculoskeletal and skin as an organ, nervous, sensory organs) in age and the sexual aspect of human organ systems for understanding vital processes and maintaining homeostasis.</p> <p><b>After completing this course students will:</b></p> <ol style="list-style-type: none"> <li>1. demonstrate knowledge of anatomy, topography and visualization in the age and sexual aspects of human organ systems;</li> <li>2. be able to identify cellular and non-cellular structures that make up the tissues of organ systems on microscopic specimens with an understanding of their formation and function;</li> </ol>
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	<ol style="list-style-type: none"> <li>3. demonstrate knowledge of the physiological processes that determine the activity and mechanisms of regulation of human organs and systems (digestion, excretion, movement, blood formation, functioning of the senses);</li> <li>4. understand and apply knowledge of the neuro-endocrine regulation of homeostasis, metabolism in different situations;</li> <li>5. understand the processes and anatomical and physiological processes during pregnancy, development and growth, involuntional changes, with various physiological stress variants;</li> <li>6. demonstrate knowledge of the physiology of higher nervous activity and the cognitive process;</li> <li>7. be able to conduct research on basic physiological functions;</li> <li>8. demonstrate analytical skills in the integration of knowledge of the anatomy, histology and function of the human body to understand and evaluate normal life processes.</li> <li>9. demonstrate the ability to identify learning gaps and create strategies to enhance one's own knowledge and skills.</li> <li>10. communicate effectively with other students and teachers regarding medical and scientific information, articulate their opinions clearly when discussing the morphological structure and physiological processes, and work effectively as a member of the team.</li> <li>11. independently find, analyze and summarize educational and scientific information in relation to situations related to the course content;</li> <li>12. work in a team, defend your point of view reasonably, consider the opinions of others, provide and receive feedback correctly using interpersonal and group communication skills</li> <li>13. recognize the importance and observe ethical principles, demonstrate responsibility and honesty in all educational interactions;</li> </ol>
Prerequisites	Morphology and physiology of human body
Post requisites	General Pathology
Information resources	<p><b>Basic literature:</b></p> <ol style="list-style-type: none"> <li>1. Saladin, Kenneth S: Anatomy &amp; Physiology. The Unity of Form and Function (2016, McGraw-Hill Education).</li> <li>2. Costanzo, Linda S.: BRS Physiology. Board Review Series.7 edition. -Wolters Kluwer Health, 2018.- 307p. - ISBN 1496367693, 9781496367693</li> <li>3. Leslie P. Gartner: Color Atlas and Text of Histology. - 7th Edition. - Wolters Kluwer, 2017. ISBN 1496346734, 9781496346735</li> <li>4. Russell K. Hobbie, Bradley J. Roth: Intermediate Physics for Medicine and Biology. - Springer, 2015. - ISBN 3319126822, 9783319126821</li> <li>5. Andersson D, Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms: Second Edition, ISBN-13 : 978-1519066626, 2016</li> <li>6. Shoibekova, Alima Zhorabaevna. Latin and Fundamentals of Medical Terminology for Medical Students with Training English [Text] : educational man. / A. Zh. Shoibekova, 2016. - 163, [1] p.</li> <li>7. Sembulingam, K. Essentials of Medical Physiology [Text] : [monogr.] / K. Sembulingam, P. Sembulingam ; Madha Medical College [et al.]. - 7th ed. - New</li> </ol>

	<p>Delhi ; London ; Philadelphia : Jaypee, 2016. - 1112 p. : il. - Ind.: p. 1069-1112. - ISBN 978-93-85999-11-6</p> <p><b>Additional literature:</b></p> <ol style="list-style-type: none"> <li>8. Standring, Susan: Gray's Anatomy: The Anatomical Basis of Clinical Practice. - 41 Elsevier Limited, 2016</li> <li>9. Elaine N. Marieb, Lori A. Smith: Human Anatomy &amp; Physiology Laboratory Manual, Main Version. - 11 edition. - Pearson Education, 2015. - ISBN 9780133999143</li> <li>10. Scanlon V. C, Essentials of Anatomy and Physiology 8th Edition, F.A. Davis Company, 2018</li> <li>11. Victor P. Eroschenko, Atlas of Histology with Functional Correlations 13th Edition, LWW, 2017</li> <li>12. William Bialek: Biophysics: Searching for Principles. - Princeton University Press, 2012. - ISBN 0691138915, 9780691138916</li> <li>13. Ghosh, Byas Deb. Human Anatomy [Text] : For Students / B. D. Ghosh ; [Anatomical Society of India (West Bengal Chapter) et al.]. - 2nd ed. - New Delhi ; Panama City ; London : Jaypee, 2013. - 948 p. : il. - Ind.: p. 913-948. - ISBN 978-93-5025-942-9</li> <li>14. Mazumdar, Sibani. Anatomy at a Glance [Text] : An Exam-Oriented Text / S. Mazumdar ; Calcutta National Medical College [et al.]. - 2nd ed. - New Delhi ; London ; Philadelphia : Jaypee, 2014. - 534 p. : il. - Ind.: p. 525-534. - ISBN 978-93-5152-355-0 : App.: p. 519-520. Glossary: p. 521-524.</li> <li>15. Baktybayeva, Lyaila Kyrgyzbayevna. Base of Physiology [Text] : laboratory practicum / L. K. Baktybayeva, G. T. Zhamanbayeva, M. S. Kulbayeva ; Al-Farabi Kazakh National University. - Almaty : Qazaq University, 2017. - 146 p. : il. - Bibliogr.: p. 145. - ISBN 978-601-04-3138-6</li> </ol> <p>Online resources:</p> <ol style="list-style-type: none"> <li>1. <a href="https://app.lecturio.com/#/">https://app.lecturio.com/#/</a></li> <li>2. <a href="https://3d4medical.com/">https://3d4medical.com/</a></li> <li>3. <a href="https://www.youtube.com/channel/UCc_I2c2bUtO0p4DVeo6-Kxg">https://www.youtube.com/channel/UCc_I2c2bUtO0p4DVeo6-Kxg</a></li> <li>4. <a href="https://sites.google.com/a/umich.edu/bluelink/curricula/anatomy-403?authuser=0">https://sites.google.com/a/umich.edu/bluelink/curricula/anatomy-403?authuser=0</a></li> <li>5. <a href="https://histologyknu.wixsite.com/info/gistologicheskie-sajty">https://histologyknu.wixsite.com/info/gistologicheskie-sajty</a></li> <li>6. <a href="http://www.histology-world.com/contents/contents.htm">http://www.histology-world.com/contents/contents.htm</a></li> <li>7. <a href="http://www.histologyguide.com/slidebox/02-epithelium.html">http://www.histologyguide.com/slidebox/02-epithelium.html</a></li> <li>8. <a href="https://histology.medicine.umich.edu/resources">https://histology.medicine.umich.edu/resources</a></li> <li>9. <a href="https://web.duke.edu/histology/">https://web.duke.edu/histology/</a></li> <li>10. <a href="http://virtuallslides.med.umich.edu/Histology/view.apml?listview=1&amp;">http://virtuallslides.med.umich.edu/Histology/view.apml?listview=1&amp;</a></li> </ol>
<p>Academic policy of the course in the context of university moral and ethical values</p>	<p><b>Academic behavior rules.</b></p> <p><i>Attendance policy</i> Attendance for class is mandatory. Attendance for an additional extracurricular research activity is highly recommended for increasing the course assessment. No less than 50% attendance is required for the lectures and workshops. Additional research activities are not required, but highly beneficial for the course better comprehension.</p> <p><i>Class participation</i> All students are expected to participate in class activities and discussions.</p> <p><i>Classroom decorum</i> All unrelated activities are prohibited during a lecture and workshop time. Cell phones, computer games and unrelated Internet and computer activities are strictly prohibited.</p>

	<p><i>Missed exams</i> Students can retake midterm exams with an official document for the days of absence. Other excuses are not accepted and the exam will be annulled. Missing of the final exam is registered according the rules of Academic Policy of the University.</p> <p><i>Late assignments</i> Late assignments, projects, reports and etc. are not accepted with no excuses.</p> <p><i>Appeals policy</i> Students may appeal instructor decisions by speaking directly with him. If a solution is not found students can consult with Head of the Department.</p> <p><i>Electronic resources</i> You are expected to regularly check your emails for updates and announcements about the course.</p> <p><i>Plagiarism and Cheating</i> As a student, you are expected to adhere to the norms of academic integrity. Academic dishonesty includes plagiarism, cheating, fabrication, unauthorized collaboration, use of notes during exams and quizzes, and other forms. These students will be given 0 with no further retake activities.</p> <p><b>Academic values. Academic honesty</b> There will be no tolerance for lapses of academic integrity. A student found to be guilty of falsifying, plagiarism and cheating or any other form of academic dishonesty will be given a failing grade.</p> <p><i>Tolerance and non-discrimination</i> There is zero tolerance for unsafe activity in laboratory during workshops and additional research activities. There will be no discrimination per nationality, gender and anything else.</p>
<p>Evaluation and attestation policy</p>	<p><b>Criteria assessment:</b> assessment of learning outcomes in relation to descriptors, verification of the formation of competencies (learning outcomes specified in the goal) is carried out by the following methods:</p> <ol style="list-style-type: none"> <li>1) testing using video, drawings, photographs, diagrams, microphotographs or OSPE using dummies and micropreparations - as part of the current / midterm / final control: final results No. 1, 3;</li> <li>2) solution of situational problems, analysis of cases - within the framework of the current / midterm / final control - final results No. 2, 4, 5, 6, 9;</li> <li>3) interview / oral interview - within the framework of the current / milestone / final control - final results No. 2, 4, 5, 6;</li> <li>4) assessment by direct observation in the framework of current control and CDS - final results No. 7, 8, 9;</li> </ol> <p><b>Summary assessment:</b> In the course, 6 current controls are planned, within the framework of which the development of the material of one section is evaluated. For the semester, admission rating points are set: <math>RD = (RK1 + MT (Mid-Term) + RK2) / 3</math>, where <math>RK1 / RK2 / MT</math> = the sum of all points for classes + points for overseas control and CPC of the corresponding period. <math>RK1</math> - 1-5 weeks, <math>MT</math> - 6-10 weeks, <math>RK2</math> - 11-15 weeks. The final control (exam) is carried out in 2 stages. First - writing, second - MCQ. The final grade for the discipline = <math>RD * 0.6 + Exam * 0.4</math></p>

### **Calendar (schedule) of the implementation of the course content**

#### *Coursework calendar*

Week/Lesson	Topic title	Number of hours lecture	Number of hours	Max grade
1-1	Lecture 1 The lymphatic and immune system. Fluid Balance	2		
1-2	Practical lesson 1 The lymphatic and immune system		2	3
1-3	Lecture 2 Electrolyte Balance and Acid–Base Balance	2		
1-4	Practical lesson 2 Fluid Balance Electrolyte Balance and Acid–Base Balance		2	3
1-5	Lecture 3 Histology of the Lymphatic System Cells of the lymphatic system, types of lymphatic tissue, red bone marrow, thymus, lymph nodes, tonsils, and spleen	1		
1-6	Practical lesson 3 Histology of the Lymphatic System Cells of the lymphatic system, types of lymphatic tissue, red bone marrow, thymus, lymph nodes, tonsils, and spleen		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers - work on mistakes.		3	
2-1	Lecture 4 General Anatomy and Digestive Processes. The Mouth Through Esophagus. The Stomach.	2		
2-2	Practical lesson 4 General Anatomy and Digestive Processes. The Mouth Through Esophagus. The Stomach.		2	3
2-3	Lecture 5 Liver. Gallbladder, pancreas. The Small Intestine and Large Intestine	2		
2-4	Practical lesson 5 Liver. Gallbladder, pancreas. The Small Intestine and Large Intestine		2	3
2-5	Lecture 6 Histology of digestive system I Microscopic Anatomy of digestive organs and tissue II Topic: Digestive system. Pharynx, esophagus, stomach, small intestine, colon.	1		
2-6	Practical lesson 6 Histology of digestive system I Microscopic Anatomy of digestive organs and tissue II Topic: Digestive system. Pharynx, esophagus, stomach, small intestine, colon.		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers - work on mistakes.		3	
3-1	Lecture 7 Nutrition.	2		
3-2	Lecture 8 Metabolic States and Metabolic Rate Body Heat and Thermoregulation	2		
3-3	Practical lesson 7 Nutrition. Metabolic States and Metabolic Rate Body Heat and Thermoregulation		3	3
3-4	Practical lesson 8 Current Control 1		1	<b>43</b>

3-5	Lecture 9 Histology of digestive system II Microscopic Anatomy of digestive organs and tissue III Liver, pancreas	1		
3-6	Practical lesson 9 Histology of digestive system II Microscopic Anatomy of digestive organs and tissue III Liver, pancreas		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		3	
4-1	Lecture 10 Overview of the Endocrine system. The Hypothalamus and Pituitary Gland. Other Endocrine glands.	2		
4-2	Practical lesson 10 Overview of the Endocrine system. The Hypothalamus and Pituitary Gland		2	3
4-3	Practical lesson 11 Other Endocrine glands.		2	3
4-4	Lecture 11 Hormones and Their Actions.	2		
4-5	Lecture 12 Histology of Endocrine System I Microscopic Anatomy of endocrine organs and tissue Endocrine system. Central endocrine system. Hypothalamus, pituitary, pineal gland.	1		
4-6	Practical lesson 12 Histology of Endocrine System I Microscopic Anatomy of endocrine organs and tissue Endocrine system. Central endocrine system. Hypothalamus, pituitary, pineal gland.		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers - work on mistakes.		3	
5-1	Practical lesson 13 Hormones and Their Actions		2	3
5-2	Lecture 13 Endocrine Disorders	2		
5-3	Lecture 14 Stress and Adaptation Eicosanoids and Other Signaling Molecules	2		
5-4	Practical lesson 14 Histology of Endocrine System II Microscopic Anatomy of endocrine organs and tissue Peripheral endocrine system Adrenal gland, thyroid, parathyroid glands. CC №1		3	18
5-6	Lecture 15 Histology Reproductive System Sexual Reproduction and Development	1		
5-7	Practical lesson 15 Histology Reproductive System Sexual Reproduction and Development		1	3
IWS with teacher	Consultation on design work IWS-1. Division into teams and distribution of topics to cases. Analysis of written answers - work on mistakes.		3	
	RK-1			100

6-1	Practical lesson 16 Endocrine Disorders. Stress and Adaptation Eicosanoids and Other Signaling Molecules		3	3
6-2	Practical lesson 17. Current Control 2		1	21
6-3	Lecture 16 Male Reproductive Anatomy. Puberty, Hormonal Control and Climacteric.	2		
6-4	Lecture 17. Sperm and Semen. Male Sexual Response	1		
6-5	Lecture 18 Histology Reproductive System I Male Male reproductive system Female reproductive system: structure and functions of the ovary, ovogenesis, fallopian tubes.	2		
6-6	Practical lesson 18 Histology Reproductive System I Male Male reproductive system		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
7-1	Lecture 19. Female Reproductive Anatomy. Puberty and Menopause.	1		
7-2	Lecture 20 Histology Female reproductive system: structure and functions of the ovary, ovogenesis, fallopian tubes	2		
7-3	Practical lesson 19 Histology Female reproductive system: structure and functions of the ovary, ovogenesis, fallopian tubes		4	3
7-4	Lecture 21 Embryology I Human embryology Sex cells. Early stages of development of the human embryo	2		
7-5	Practical lesson 20 Male Reproductive Anatomy. Puberty, Hormonal Control, and Climacteric. Sperm and Semen. Male Sexual Response		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers - work on mistakes.		4	
8-1	Lecture 22 Oogenesis and the Sexual Cycle. Female Sexual Response	2		
8-2	Practical lesson 21 Female Reproductive Anatomy. Puberty and Menopause. Oogenesis and the Sexual Cycle. Female Sexual Response.		2	3
8-3	Lecture 23 Pregnancy and Childbirth. Lactation	2		
8-4	Practical lesson 22 Pregnancy and Childbirth. Lactation. CC №3 Reproductive		2	23
8-5	Lecture 24 Human embryology Sex cells. Early stages of development of the human embryo	1		
8-6	Practical lesson 23 Human embryology Sex cells. Early stages of development of the human embryo		2	3

IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
9-1	Lecture 25 Human embryology Fertilization. Splitting up. Cleavage. Implantation	1		
9-2	Practical lesson 24 Human embryology Fertilization. Splitting up. Cleavage. Implantation		2	3
9-3	Lecture 26 Human embryology Gastrulation. Differentiation of germ layers, organogenesis.	1		
9-4	Practical lesson 25 Human embryology Gastrulation. Differentiation of germ layers, organogenesis.		2	3
9-5	Lecture 27 Human embryology. Extraembryonic organs – amnion, yolk sac, chorion, placenta, umbilical cord	1		
9-6	Practical lesson 26 Human embryology Extraembryonic organs – amnion, yolk sac, chorion, placenta, umbilical cord		2	3
9-7	Lecture 28 The Spinal Cord	2		
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers - work on mistakes.		4	
10-1	Lecture 29 Biophysics of nervous System Electrophysiology of Neurons Synapse Neural Integration	1		
10-2	Practical lesson 27 Biophysics of nervous System Electrophysiology of Neurons Synapse Neural Integration		2	3
10-3	Practical lesson 28 Current control №4 Embriology		2	23
10-4	Lecture 30 Histology of Nervous System Supportive Cells (Neuroglia). Peripheral nervous system. The spinal cord	2		
10-5	Practical lesson 29. Histology of Nervous System Peripheral nervous system The spinal cord		2	3
10-6	Lecture 31 Histology of nervous system Central nervous system. Brain. The cerebral cortex. Cerebellum. Overview of the Brain Meninges, Ventricles, Cerebrospinal Fluid, and Blood Supply	2		
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
	Midterm			100
11-1	Practical lesson 30 Histology of nervous system Central nervous system. Brain. The cerebral cortex. Cerebellum. Overview of the Brain Meninges, Ventricles, Cerebrospinal Fluid, and Blood Supply		2	3

11-2	Lecture 32 The Spinal nerves. Somatic Reflexes.	2		
11-3	Practical lesson 31 The Spinal Cord. The Spinal nerves. Somatic Reflexes.		2	3
11-4	Lecture 33 Overview of the Brain Meninges, Ventricles, Cerebrospinal Fluid, and Blood Supply	2		
11-5	Practical lesson 32 Overview of the Brain Meninges, Ventricles, Cerebrospinal Fluid, and Blood Supply		2	3
11-6	Lecture 34 Histology The Sensory Organs Organ of sight, organ of smell. Organs of hearing and balance, taste.	1		
IWS with teacher	Discussion of progress of Independent work of the student #1		4	
12-1	Lecture 35 The Hindbrain and Midbrain. The Forebrain	2		
12-2	Practical lesson 34 The Hindbrain and Midbrain. The Forebrain		2	3
12-3	Lecture 36 Integrative Functions of the Brain	2		
12-4	Practical lesson 34 Integrative Functions of the Brain		2	3
12-5	Lecture 37 Histology The Sensory Organs Organ of sight, organ of smell. Organs of hearing and balance, taste	1		
12-6	Practical lesson 35 Histology The Sensory Organs Organ of sight, organ of smell. Organs of hearing and balance, taste.		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
13-1	Practical lesson 36 Current Control №5 Brain Spinal cord		1	19
13-2	Lecture 38 The Cranial Nerves	2		
13-3	Lecture 39 General Properties and anatomy of the Autonomic Nervous System	2		
13-4	Practical lesson 37 Histology The Sensory Organs Organ of sight, organ of smell. Organs of hearing and balance, taste. CC#2 of histology		3	13
13-5	Lecture 40 The laws of geometric optics. Eye as an optical system	1		
13-6	Practical lesson 38 The laws of geometric optics. Eye as an optical system		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
14-1	Practical lesson 39 The Cranial Nerves		2	3
14-2	Lecture 41 Autonomic Effects on Target Organs.	2		
14-3	Lecture 42 Central Control of Autonomic Function	1		

14-4	Practical lesson 40 General Properties and anatomy of the Autonomic Nervous System Autonomic Effects on Target Organs. Central Control of Autonomic Function		2	3
14-5	Lecture 43 Properties and Types of Sensory Receptors The General Senses;	2		
14-6	Practical lesson 41 Properties and Types of Sensory Receptors The General Senses;		2	3
IWS with teacher	Consultation on anatomical structures for models according to the topics covered. Analysis of written answers and Current control questions - work on mistakes.		4	
15-1	Lecture 44 The Chemical Senses. Taste and Smell	1		
15-2	Practical lesson 42 The Chemical Senses. Taste and Smell.		1	
15-3	Lecture 45 Eye and Vision.	2		
15-4	Practical lesson 43. Eye and Vision.		2	3
15-5	Lecture 46 Hearing and Equilibrium	2		
15-6	Practical lesson 44. Hearing and Equilibrium		2	3
15-7	Practical lesson 45 Current control №6 Cranial nerves. Sense organs. Recap. Capstone - case		1	19
IWS with teacher	Independent work of the student with the teacher – presentation of Independent work of the student#2		4	10
	RK2			100
	Total			300

Head of the Department \_\_\_\_\_ Sarsenova L.K.

Chairman of the method bureau of the faculty \_\_\_\_\_ Ualiyeva A.E.