


ONTUSTIK-QAZAQSTAN <b>MEDISINA AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ		 SOUTH KAZAKHSTAN <b>MEDICAL ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
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## 1. Catalog of elective disciplines for the 2023-2024 academic year

2. **Department:** Biology and biochemistry

3. **Level of training** Undergraduate

4. **Educational program:** Dentistry

5. **Cours:** 2

6. **Name of elective**

7. **disciplines:** Medical biochemistry

8. **Number of credits:** 5

9. **Purpose:** the formation of a holistic view of students about the molecular mechanisms and regulation of the main metabolic processes, the features of their course in human bone and dental tissues, the use of biochemical indicators, their competent interpretation for the diagnosis and control of the effectiveness of the treatment of dental diseases.

10. **Course content:** Biological functions and structural organization of proteins. Enzymes. The role of membranes in metabolism and their diversity. Biochemical foundations of rational nutrition. Specific and general pathways of catabolism. Bioenergetics. About the exchange of carbohydrates, lipids and proteins. Biochemistry of hormones. Biochemistry of the liver and kidneys. Hemoprotein exchange. Biochemistry of blood. Biochemistry of the nervous muscular, connective, bone, dental tissues.

11. **Tasks:**

12. to form students' understanding of the role of biological chemistry in the professional activities of future dentists;

13. give an idea of the chemical structure, properties and biological functions of proteins, carbohydrates, lipids and other biologically active compounds in living organisms;

14. form an idea of the biochemical patterns of energy transformation, metabolism and regulation of metabolic processes occurring in bone and dental tissues;

15. give an idea of the features of the processes of mineralization, demineralization bone and dental tissues and factors affecting their metabolism;

16. to form an idea of modern biochemical approaches for the diagnosis of dental diseases and the correction of these disorders.


17. **Justification for the choice of discipline:** Practical medicine requires the training of highly qualified dentists whose activities are aimed at improving the dental service.

18. In this regard, it is advisable for future dentists to study the discipline of "biological chemistry", which allows you to get a holistic view of the metabolic processes of the bone and dental tissues of the body, the mechanisms of the occurrence of dental diseases.

19. Biological chemistry is one of the main basic medical disciplines that studies the chemical processes that underlie the life of cells, tissues and the body as a whole. The main focus of teaching biochemistry to future dentists is the study of metabolic processes and the characteristics of the metabolism of bone and dental tissues and the factors influencing this process.

20. **Learning outcomes (competencies)**

	Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)

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<p>Demonstrates knowledge of the subject and tasks of medical biochemistry for professional activities.</p> <p>Knows the methods of conducting biochemical analyzes.</p> <p>Describes the molecular mechanisms of the flow and regulation of metabolic processes .</p> <p>Outlines the main provisions of bioenergetics and nutritional biochemistry.</p> <p>Knows the basic principles of the application of biochemical research methods in practice, the reference values of the main biochemical parameters.</p>	<p>Able to work on modern equipment: biochemical analyzer, spectrophotometer, when conducting biochemical analyses.</p> <p>Able to work and search for the necessary data from a special reference material a .</p> <p>Interprets the results of laboratory and instrumental studies of body fluids.</p> <p>Able to determine the reference values of the main biochemical parameters of blood serum.</p>	<p>Able to express their own opinions and critically analyze the results of educational experiments.</p> <p>He knows how to defend his own judgments in practical classes, at meetings of the student circle, student scientific conferences, etc.</p> <p>When planning and conducting educational experiments, he is able to explain the observed facts and phenomena, their cause-and-effect relationships.</p> <p>Able to work in a team, make a collective decision.</p> <p>Able to transfer to students, teachers, examiners the knowledge gained in the process of studying the discipline.</p>
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**40. 1 2. Prerequisites:** chemistry, molecular biology and medical genetics, fundamentals of morphology and physiology

**41. 13. Postrequisites:** "General pathology", "Pathology of organs and systems", "General surgery".

**42. 1 4. Literature:**

**43. main**

**44. In Russian**

45. Biochemistry, ed. Corresponding Member RAS, prof. E.S. Severina.- M., 2011

46. Tapbergenov S.O. "Medical and Clinical Biochemistry" - Evero , 201 7 . Itom;

47. Tapbergenov S.O. "Medical and Clinical Biochemistry" - Evero , 201 7 . III volume;

48. Tapbergenov S.O. Medical biochemistry. - Astana, 2011.

**49. Additional:**


50. Campbell M.K., Biochemistry, part 1, Almaty-2013;

. Biochemistry: textbook / ed. E. S. Severina. - 5th ed., rev . and additional - M. : GEOTAR - Media, 2011.

. Guide to practical exercises in biological chemistry: textbook.-methodical hands. for medical students Universities / ed. S. O. Tapbergenova . - Almaty: Evero , 2012. - 150 p.

. Biological chemistry with exercises and tasks: textbook / ed. S. E. Severina. - M. : GEOTAR - Media, 2011. - 624 p. + email opt. disk (CD-ROM)

**54. Medical Biochemistry: In Kazakh**

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55. "Biochemistry" E.S. Severinnin ed., "GEOTAR, Media", 2014; 2. Tapbergenov S.O. Medical Biochemistry - Almaty, 2011
56. Seitembetov T.S. Biological chemistry-Almaty 2011
57. Seitov Z.S., Biochemistry, - Almaty, 2012 ;


**58. On English language**

59. Baynes JW, Dominiczak MH Medical Biochemistry, Mosby Elsevier, 2014
60. Ferrier, Denise R. Biochemistry: Lippincott's Illustrated Reviews : textbook/Denise
61. R.Ferrier. -7<sup>th</sup> ed. - Philadelphia: Wolters Kluwer, 2017.

**. Electronic resources: Medical biochemistry**

- . 1. Biochemistry [Electronic resource]: textbook for universities / ed. E. S. Severina. - 5th ed. , correct . and additional - Electron. text data. (66.3 Mb). - M. : GEOTAR - Media, 2013. - 768 p. email opt. disc (CD-ROM).
- . 2. Biochemistry [Electronic resource ]: textbook / edited by E. S. Severin. - 5th ed. - Electron. text data. (66.4 MB). - M. : Publishing group "GEOTAR-Media", 2011. - 768 p. email opt. disc (CD-ROM
- . 3. Biochemistry with exercises and tasks [Electronic resource ]: textbook. for universities / E. S. Severin [and others ]; ed. E. S. Severina. - Electron. text data. (58.2 Mb). - M. : GEOTAR - Media, 2010. - 384 p. email opt. disc (CD-ROM ) : ill. - (Electronic textbook).

1. **Department:** Microbiology, Virology and Immunology
2. **Level of training:** Bachelor's degree
3. **Specialty:** "Dentistry"
4. **Course:** 2
5. **Name of discipline:** "Microbiology and immunology"
6. **Number of credits:** 4
7. **Target:** General microbiology is an important and fundamental basis in such areas of medicine as infectious diseases, clinical, sanitary microbiology, epidemiology, immunology and allergology. It is very important for a future doctor to know the diagnosis and methods of diagnosing each known infectious disease, which is necessary for a doctor of any profession and is of great interest when studying the entire course of microbiology.
8. **Tasks:**  
The main tasks of modern medical microbiology are:
  - study of the role of microbes in the occurrence of pathological conditions of the human body;
  - study of microbes - causative agents of human infectious diseases, as well as diseases common to humans and animals;
  - study of the structure and metabolism of human pathogens;
  - study of the influence of environmental factors on the vital activity of microbes;
  - study of the microflora of the human body, soil, water, air, food, medicinal raw materials, industrial, household, medical and other objects;
  - development and improvement of means and methods of laboratory diagnostics of infectious diseases; - development and search for effective means for the specific prevention and treatment of human infectious diseases (vaccines, sera, immunoglobulins, antibiotics and other drugs);
  - the use of products of microbiological synthesis in the production of prophylactic and therapeutic agents.

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9. **The content of the discipline .** Medical microbiology studies the structure, vital activity and ecology of microorganisms, their biological properties, pathogenicity factors of pathogens of human infectious diseases and develops strategic methods for their diagnosis, treatment and prevention. Immunology is one of the most promising and rapidly developing biomedical sciences, which is explained by the very nature of the immune processes involved in all physiological and pathological events.
10. **Rationale for the choice of discipline:** An important place in the laboratory diagnosis of infectious diseases and non-infectious diseases of microbial origin is occupied by microbiological diagnostics, which is carried out in bacteriological, virological, immunological and other laboratories. Microbiological diagnostics is based on the detection in the patient's body of the microorganism that caused the disease, its components (antigens, nucleic acids), its metabolic products (toxins) or changes in homeostasis parameters (immunological parameters). In order to bring diagnostic microbiological studies closer to the practice of a doctor, the microorganisms under consideration are grouped taking into account the pathogenetic and epidemiological signs of the diseases they cause (zooanthroposes, groups of intestinal infections, wound infections, etc.). This makes it possible to justify the choice of material and the direction of microbiological research, based on a preliminary clinical diagnosis. The obtained laboratory data allow the doctor to make a final diagnosis of the disease and prescribe rational antibiotic and immunotherapy.

**11. Learning outcomes (competencies):**

<b>RO 1</b>	Demonstrates basic and clinical knowledge of major dental diseases in adults and children.
<b>RO 4</b>	Provides treatment and prevention of major dental diseases in patients of all age groups
<b>RO 8</b>	Applies scientific principles, methods and knowledge in medical practice and research. Able to continuous self-education and development.


**12. Prerequisites:** Chemistry, molecular biology and medical genetics, module "Morphology and Physiology"

**13. Postrequisites:** Infectious diseases, dermatovenereology and phthisiology

**14. Literature**

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Electronic resources, including but not limited to: databases, simulation animations, professional blogs, websites, other electronic reference materials (e.g. video, audio, digests)	<b>N o.</b>	<b>Name</b>	<b>Link</b>
	1	SKMA repository	<a href="http://lib.ukma.kz/repository">http://lib.ukma.kz/repository</a>
	2	Digital catalogue - For internal use - For external use	<a href="http://10.10.202.52">http://10.10.202.52</a> <a href="http://89.218.155.74">http://89.218.155.74</a>
	3	Republican interuniversity electronic library	<a href="http://rmebrk.kz/">http://rmebrk.kz/</a>
	4	Student Advisor	<a href="http://www.studmedlib.ru">http://www.studmedlib.ru</a>
	5	Paragraph	<a href="https://online.zakon.kz/Medicine">https://online.zakon.kz/Medicine</a>
	6	"Law" base of normative legal acts	<a href="https://zan.kz /ru">https://zan.kz /ru</a>
	7	Aknurpress __ digital library	<a href="https://aknurpress.kz/login____">https://aknurpress.kz/login____</a>
	8	Scientific electronic library	<a href="https://elibrary.ru/">https://elibrary.ru/</a>
	9	« BooksMed » kitaphanasy electrodes	<a href="http://www.booksmed.com">http://www.booksmed.com</a>
	10	" Web of science " ( Thomson Reuters )	<a href="http://apps.webofknowledge.com">http://apps.webofknowledge.com</a>
	el ev en	" Science Direct " ( Elsevier )	<a href="https://www.sciencedirect.com">https://www.sciencedirect.com</a>
	12	" Scopus " ( Elsevier )	<a href="www.scopus.com">www.scopus.com</a>
	13	PubMed	<a href="https://www.ncbi.nlm.nih.gov/pubmed">https://www.ncbi.nlm.nih.gov/pubmed</a>
Electronic textbooks	1. Alimzhanova, G. T. Zheke microbiology. 1-2 bolim [Electronic resource]: оқу қыралы / F. T. Alimzhanova. - Electron. text data. ( 60.9Mb). - Almaty: Evero, 2016. - 380 bet. email opt. disc (CD-ROM). 2. Medical microbiology, virology and immunology. In 2 vols. Vol. 1, 2 [Electronic resource]: textbook / ed. V. V. Zvereva, M. N. Boychenko. - Electron. text data. (47.3 Mb). - M. : GEOTAR - Media, 2011. - 448 + 480 p. email opt. Disk		
Literature	<b><i>In Russian main:</i></b> 1. Microbiology, virology: a guide to practical exercises: textbook / ed. V. V. Zvereva. - ; Min. education and science of the Russian Federation. Recommended by SBEE DPO "Russian Medical Academician of Postgraduate Education" Min. healthcare of the Russian Federation. - M. : GEOTAR - Media, 2015. - 360 p. 2. Fundamentals of microbiology and immunology: textbook. for honey. schools and colleges / ed. V. V. Zvereva, M. N. Boychenko; Ministry of Education and Science of the Russian Federation. - ; Rec. GBOU DPO "Russian Medical Acad. Postgraduate Education". - M. : GEOTAR - Media, 2014. - 368 p. : ill. 3. Microbiology: textbook / ed. V. V. Zvereva, M. N. Boychenko. - M. : GEOTAR - Media, 2012. - 608 p. : ill. 4. Seytkhanova B.T. Textbook for laboratory studies in private microbiology (intestinal infections): textbook. Benefit. - Shymkent, 2012 5. Tlepov, A. A. Microbiology: textbook for higher. textbook institutions / A. A. Tlepov. - Almaty: Evero, 2011. - 314 <b><i>additional:</i></b>		

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	<p>1. Microbiology, virology: a guide to practical exercises: textbook / ed. V. V. Zvereva. - ; Min. education and science of the Russian Federation. Recommended by SBEE DPO "Russian Medical Academician of Postgraduate Education" Min. healthcare of the Russian Federation. - M. : GEOTAR - Media, 2015. - 360 p.</p> <p><b>in Kazakh main:</b></p> <p>1. Medical microbiology, virology and immunology: okulyk. 2 volumes. Volume 1 / kazak tiline room. Қ. Kudaibergenuly; ed. V. V. Zverev. - M.: GEOTAR - Media, 2016. - 416bet s.</p> <p>2. Medical microbiology, virology and immunology: okulyk. 2 volumes. 2 volume / kaz. tel. room Қ. Kudaibergenuly. - M.: GEOTAR - Media, 2016. - 480 bet. With.</p> <p>3. Zheke microbiology. 1 big. Medical bacteriology: оқу қыралы / F. T. Alimzhanova [can.]. - Almaty: Evero, 2016. - 380 bet. With.</p> <p>4. Zheke microbiology. 2 big. Medical protozoology, mycology and virology: oku қыралы / F. T. Alimzhanova [can.]. - Almaty: Evero, 2016. - 272 bet. With.</p> <p>5. Bakhitova, R. A. Microbiology, virology panninen darister zhinagy: оқу қыралы / R. A. Bakhitova. - ; Atyrau oblystyq biliktiligin arttyratyn zhane kaita dayarlaytyn in-t basp. Usyngan. - Almaty: Evero, 2014. - 160 bet. With.</p> <p>6. Nurzhanova, A. U. Microbiology and virology: oku kuraly / A. U. Nurzhanova, M. Sh. Seralieva, N. U. Abdukasymova. - ; Shymkent honey. college. oku-adist. kenesinde talkylanyp, baspaga usyngan. - Shymkent: "Nurly Beine", 2012. - 272 bet. With.</p> <p>7. Arykpayeva, Y. T. Medical microbiology. T. 1: oku kuraly - Karagandy: LCD "Ak Nur", 2012. - 100 copies.</p> <p>8. Arykpayeva, Y. T. Medical microbiology. T. 2: oku kuraly. - Karagandy: ZhK "Ak Nur", 2012. - 100 copies.</p>
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## 1. Department of Obstetrics and Gynecology

### 2. Level of training-Bachelor

### 3. Educational program-6B10103 " Dentistry»


### 4. Course – 4, number of credits-3, number of hours-90.

### 5. Name of elective discipline-Obstetrics and Gynecology

#### Goal:

Formation of competencies for the diagnosis, treatment and prevention of dental diseases during pregnancy and in the postpartum period, taking into account the peculiarities of the course of physiological and pathological pregnancy, the postpartum period and the lactation period; with frequent gynecological diseases; training in the basics of practical skills used in obstetrics and gynecology, including emergency conditions. Improve communication skills of interpersonal communication and counseling of pregnant women, postpartum patients and gynecological patients.

**The content of the discipline:** Obstetrics and gynecology studies the physiology and pathology of pregnancy, childbirth, the postpartum period, fetal growth and development, the physiology and pathology of the child in the neonatal period; the physiology and pathology of the reproductive system, reproductive organs in all periods of a woman's life: antenatal, postnatal, neutral, pubertal, reproductive, perimenopausal, postmenopausal.

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### Tasks:

1. To give students up-to-date knowledge about the main manifestations of the most common obstetric conditions and gynecological pathologies;
2. Teach them to provide emergency care for the most common obstetric conditions and gynecological diseases, to make an observation plan, to provide the necessary care to the patient;
3. Teach to observe and control sanitary and hygienic and anti-epidemic regimes in obstetric and gynecological institutions in accordance with regulatory documents;
4. Teach to train (advise) patients and family on family planning and contraception issues;
5. Teach to provide pre-medical care for emergency conditions in obstetrics and gynecology.

### Justification:

Organization of women's health protection in the Republic of Kazakhstan. Help in emergency situations should be a doctor of any specialty, this is especially important in obstetrics, where the life of the mother and fetus depends on the speed and skill of the doctor. Treatment of dental diseases, taking into account the obstetric and gynecological status in the presence of concomitant obstetric and gynecological pathology; emergency care for pregnant women, women in labor, women in labor.

The role of the dentist in the prevention of dental diseases in women, the influence of the course of pregnancy and childbirth on the development of pathology of the dental system in children. Odontogenic infection in the development of purulent-septic complications in pregnant women and postpartum women. Critical periods of pregnancy, stages of development of the embryo/fetus; changes that occur in the body of a woman during pregnancy. Complicated course of pregnancy (early toxicosis, gestosis, anemia, infection)


### Learning outcomes (competencies)

- 1) Knowledge and understanding:
  - demonstrates knowledge of the subject and tasks of obstetrics and gynecology;
- 2) Applying knowledge and understanding
  - knows the methods of research and primary care in obstetrics and gynecology;
  - has the skills of medical examination and prevention of pathology in obstetrics and gynecology ;
- 3) Formation of judgments
  - uses the acquired knowledge to understand the features of etiopathogenesis, clinic, complications and extragenital diseases during pregnancy;
  - applies the theoretical knowledge gained in midwifery for further study at the internship level;
- 4) Communication skills
  - demonstrates communication skills when interacting with different people in different obstetric situations;
  - demonstrates professional behavior – responsibility, productivity, self-esteem, reflection;
- 5) Learning skills or learning abilities
  - demonstrates readiness and ability to acquire new knowledge;

Prerequisites: Anatomy, physiology, and pathology.

Post-requirements: Nursing care in obstetrics and gynecology

### Literature

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basic:

1. Bodyazhina I. I. Obstetrics: textbook 1,2,3 Vol.- Evero, 2015
2. management of Obstetrics and gynecology for paramedics and obstetricians: Ed. V. N. Prilepskoy, V. E. Radzinsky. Moscow, 2007. - 688 P.
3. Radzinsky V. E. Obstetrics: textbook + CD. Moscow, 2008-904 P.
4. Gynecology: textbook /L. N. Vasilevskaya [and doctor].] 6-E izd. - Rostov B/D, 2007

additional:

1. urgent assistance in obstetrics and gynecology: management / Ed. "What's The Matter?" - 2nd ed., ISPR. and the ball. Moscow: GEOTAR-media, 2011.
2. Kailyubayeva G. zh. physiology of pregnancy. Dorodovoy care : educational and methodological support / G. zh. Kailyubayeva, G. N. Baimusanova; MZ RK-2-OE izdaniye-Karaganda: AKNUR, 2019. - 132 H