**AL-FARABI KAZAKH NATIONAL UNIVERSITY**

**Faculty of Medicine and Health Care**

**Higher School of Medicine**

**Department of Clinical Disciplines**

|  |  |
| --- | --- |
|  | Approved **Head of department**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Kalmatayeva Zh.А.****"\_\_\_\_\_\_"\_\_\_\_\_\_\_\_ 2022 г.** |

**EDUCATIONAL AND METHODICAL COMPLEX OF DISCIPLINE**

**PMS3208**

**Зәр шығару жүйесінің патологиясы және гомеостаз/**

**Патология мочевыделительной системы и гомеостаз/**

**Pathology of the urinary system and homeostasis**

**DIRECTION OF PREPARATION**

**6B101 PUBLIC HEALTH**

**EDUCATIONAL PROGRAM**

**6В101103 GENERAL MEDICINE**

Course – 3

Semester – 5

Number of credits – 4

**Almaty 2022**

Educational-methodical complex of discipline is made by Doctor of Medical Sciences, Professor Chingaeva G.N.

Based on the working curriculum of the educational program

6В101103 General Medicine

Considered and recommended at the meeting of the Department of clinical disciplines

from "\_\_\_ " \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2021 G., Protocol №

Head. the Department \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Professor Kurmanova G. M.

 (signature)

It is recommended by methodical Bureau of faculty

"\_\_\_\_" \_\_\_\_\_\_\_\_\_\_\_ 2021 G., Protocol №

Chairman of the method Bureau of the HSM \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Zhunasheva R.T.

 (signature)

**Al-Farabi Kazakh National University**

**Faculty of medicine and health**

**Higher school of medicine**

**Department of clinical disciplines**

**CLAIM**

**Dean of faculty**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Kalmataeva J. A.**

**"\_\_\_\_\_\_"\_\_\_\_\_\_\_\_ 2022**

**SYLLABUS**

**for 5 semester-2022-2023 academic year**

**Academic course information**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Discipline code | Discipline name | Type | Number of hours per week | ECTS |
| Practice | IWS T | СРС |  |
| PSSS3206 | Pathology of the urinary system and homeostasis | ПД | 60 | 20 | 40 | 4120 |
| Course leader | Name, academic degree, academic title:MD Chingaeva Gulnar Nurtasovna | Office hours | by schedule |
| e-mail | E-mail: chingayevagulnar@gmail.com |
| Phone numbers: | +77017419079 | Location |  |
| Assistant  | Mustapaeva Nagima Musabekovna | Офис-часы |  |
| e-mail | mustapayeva.n@mail.ru |
| Phone numbers: | +77017134293 | Location |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Academic presentation of the course | Type of training course: compulsory, practicalThe discipline includes the study of pathogenesis, pathomorphology, clinical presentation of problems (syndromes) and clinically oriented pharmacology of urinary tract pathology. Training involves the development of an analytical and problem-oriented approach to clinical situations; the formation and development of skills in the clinical diagnosis of pathology and the substantiated formation of syndromic diagnosis.**Upon successful completion of this discipline interns will be able to:**

|  |  |
| --- | --- |
| 1. Apply knowledge on the pathogenesis of kidney and urinary tract pathology in the process of diagnosis and treatment, as well as in the process of maintaining homeostasis.
 | 2 |
| 1. To be able to conduct targeted questioning and physical examination of the patient, taking into account age characteristics with pathology of the kidneys and urinary tract.
 | 3 |
| 1. Identify diagnostic and therapeutic interventions related to common diseases affecting the kidney and urinary tract.
 | 3 |
| 1. Interpret the basic data of laboratory and instrumental examination in the pathology of the kidneys and urinary tract.
 | 3 |
| 1. Integrate knowledge to identify the main syndromes of kidney and urinary tract damage: urinary, nephritic, nephrotic, AKI, CKD, arterial hypertension.
 | 3 |
| 1. Describe the social, economic, ethnic, and racial factors that play a role in the development, diagnosis, and treatment of nephrologic and urologic diseases.
 | 3 |
| 1. Classify, describe the mechanism of action, pharmacokinetics, side effects, indications and contraindications for the use of drugs that affect renal function and are used in the treatment of diseases of the kidneys and urinary tract.
 | 3 |
| 1. Demonstrate the ability for effective medical interviewing, taking into account the rules and norms of the doctor-patient relationship and knowledge of the basic principles of human behavior in different age periods, in normal and in case of deviations in behavior, in different situations.
 | 3 |
| 1. Demonstrate commitment to the highest standards of professional responsibility and integrity; comply with ethical principles in all professional interactions.
 | 3 |
| 1. Demonstrate the need for continuing professional education and improvement of their knowledge and skills.
 | 3 |
| 1. Demonstrate the skills of conducting scientific research, the desire for new knowledge and the transfer of knowledge to others.
 | 3 |

 |
| Prerequisites | 1. Modul “Pathology of organs and systems”
2. Modul “Patient and doctor”
 |
| Post-requisites | Profile disciplines |
| Information resources | **Main/basic literature**1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416.
2. Tomilina N.A. and others Chronic kidney disease. Selected Chapters of Nephrology/ ГЭОТАР-Медиа, 2017, 512.
3. Shiman D.A. Шейман Д.А. Pathophysiology of the kidney. Translation from English, 2017. 192.
4. Nephrology. Clinical guidelines/ Shilov E.M. Smirnov A.B. Kozlovskaya N.L./ ГЭОТАР-Медиа, 2016, 816.
5. Brenner GM, Stevens CW. Pharmacology. 2018, 568 p.
6. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, 656р.
7. Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, 1456р
8. Lippincott Illustrated review Pharmacology seventh edition, 2019.
9. Nephrology secrets, fourth edition edited by Edgar V. Lerma, 2018, 656р.
10. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, 336р.
11. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018,
12. USMLE Step 2 CK Lecture Notes 2020. Internal Medicine
13. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. 3529p.

Handbook of renal biopsy pathology Alexandr J. Howie, Third edition, 2020, 297р.**Internet resources:** 1. Medscape.com - <https://www.medscape.com/familymedicine>
2. Oxfordmedicine.com - <https://oxfordmedicine.com/>
3. Uptodate.com **-** [**https://www.wolterskluwer.com/en/solutions/uptodate**](https://www.wolterskluwer.com/en/solutions/uptodate)
4. KDIGO- [**https://kdigo.org/wp-content/uploads**](https://kdigo.org/wp-content/uploads)
5. Osmosis **-** [**https://www.youtube.com/c/osmosis**](https://www.youtube.com/c/osmosis)
6. Ninja Nerd **-** [**https://www.youtube.com/c/NinjaNerdScience/videos**](https://www.youtube.com/c/NinjaNerdScience/videos)
7. Cor Medicale **-** [**https://www.youtube.com/c/CorMedicale**](https://www.youtube.com/c/CorMedicale) **- medical video animations in Russian.**
8. Lecturio Medical **-** [**https://www.youtube.com/channel/UCbYmF43dpGHz8gi2ugiXr0Q**](https://www.youtube.com/channel/UCbYmF43dpGHz8gi2ugiXr0Q)
9. **SciDrugs -** [**https://www.youtube.com/c/SciDrugs/videos**](https://www.youtube.com/c/SciDrugs/videos) **- video lectures on pharmacology in Russian..**
 |
| Academic policy of the course in the context of University values | **The rules of academic conduct in the clinic:****1) Appearance:*** office style dressing
* clean ironed robe
* medical mask
* medical cap (or a neat hijab without drooping ends)
* medical gloves
* changeable shoes
* neat hairstyle, neatly cut short nails
* badge with full name (full name)

**2) Mandatory presence of a phonendoscope, tonometer, measuring tape****3) Properly executed sanitary (medical) book****4) Availability of a vaccination passport or other document on the fully completed course of vaccination against COVID-19****5) Mandatory observance of the rules of personal hygiene and safety****6) Systematic preparation for the educational process.****7) Accurate and timely maintenance of reporting documentation.****8) Active participation in medical, diagnostic and social events of the departments.****Discipline:*** No late arrival for class or morning conference. If you are late - the decision on admission to the lesson is made by the teacher leading the lesson. If there is a valid reason, it is better to inform the teacher about the delay and the reason by message or by phone. After the third delay, the student writes an explanatory letter to the head of the department indicating the reasons for the delay and goes to the dean's office to obtain admission to the lesson. If you are late without a good reason - the teacher has the right to remove points from the current grade (1 point for each minute of delay)
* Leaving class ahead of schedule, being outside the workplace during school hours is considered absenteeism.
* Additional work of students during school hours (during practical classes and shifts) is not allowed.
* For students who have more than 3 passes without notifying the curator and good reason, a report is issued with a recommendation for expulsion.
* No retake for missed classes
* Students are fully subject to the Internal Regulations of Clinical Bases of the Department

Discipline:1. No late arrival for class or morning conference is allowed. If you are late - the decision on admission to the lesson is made by the teacher leading the lesson. If there is a valid reason, it is better to inform the teacher about the delay and the reason by message or by phone. After the third delay, the student writes an explanatory letter to the head of the department indicating the reasons for the delay and goes to the dean's office to obtain admission to the lesson. If you are late without a good reason - the teacher has the right to remove points from the current grade (1 point for each minute of delay)
2. Leaving class ahead of schedule, being outside the workplace during school hours is regarded as absenteeism.
3. Additional work of students during school hours (during practical classes and shifts) is not allowed.
4. For students who have more than 3 passes without notifying the curator and a good reason, a report is issued with a recommendation for expulsion.
5. Missed classes are not completed.
6. When conducting an online lesson, all students are required to connect with a video.
7. In case of technical problems with a computer, laptop, Internet connection, modem, router, video camera, microphone, the student must take photo / screenshots / video evidence. The student is obliged to immediately report the problem to the teacher or head of the group. Provide evidence of technical problems at the first request by the teacher or supervisor.
8. In case of non-fulfillment of the points specified in clause 7, the student is considered absent from the lesson.
9. When conducting an online lesson, the student must be present in the classroom in a neat form - washed, combed, dressed in a white doctor's coat.
10. It is unacceptable to attend online classes in a sleepy state, even despite the time difference between Almaty and the student's location.
11. When conducting an online lesson, the student must be in a room where it is light, quiet, there are no strangers. It is unacceptable to connect to classes while in a taxi, shop, pharmacy, cafe, park, in the courtyard of a house or in other places unsuitable for study. When joining classes from places unsuitable for study, the student is considered absent from the class.
12. Students are fully subject to the Internal Regulations of the clinical bases of the department, that is, the requirements of a hospital, a hospital, a polyclinic, a simulation center where the lesson is held.

**Academic values:**Academic honesty and integrity: independence in all assignments; inadmissibility of plagiarism, forgery, use of cheat sheets, cheating at all stages of knowledge control, deception of the teacher and disrespectful attitude towards him. |
| Evaluation and certificationpolicy | **Criteria evaluation:** assessment of work by types of activity on the Department's checklists**Summative assessment: the final control of the discipline of 2 stages:** 1.Testing 2. Mini-clinical examination MiniCex |

**Calendar of implementation of the course content:**

|  |  |  |  |
| --- | --- | --- | --- |
| № | Title | Number of hours | Maximum score |
|  |  |  |  |
| 1.  | Syndromes: urinary, renal failure, arterial hypertension | 12 | 1-8 |
| 2 | Nephrotic syndrome | 12 | 1-9 |
| 3 | Nephritic syndrome | 12 | 1-9 |
|  | ***Midterm***  |  | 1-9 |
| 4.  | Acute kidney injury | 12 | 1-9 |
|  | Chronic kidney disease | 12 | 1-9 |
|  | Urinary tract infection. Мale reproductive system  | 6 | 1-9 |
|  | Kidneys and pregnancy | 6 | 1-9 |
|  | **Boundary control  *-2*** |  |  |
|  | ***Final control*** *(1step+2step):* |  |  |
|  | 1. step – Тest
 |  |  |
|  | 1. step – MiniCEX
 |  |  |

**For the course as a whole - overall admission rating (OAR- ОРД)**

|  |  |
| --- | --- |
| Seminar or training | 30% |
| **Midterm** | 70% |
| **Total Border control 1** | 100% |
| Seminar or training | 30% |
| **Midterm** | 70% |
| **Total Midterm** | 100% |
| 360 score - behavior and professionalism | 20% |
| Science project | 20% |
| **Midterm** | 60% |
| **Total Border control 2** | 100% |

|  |  |
| --- | --- |
| Seminar or training | 20% |
| Patient supervision and preparation of clinical analysis | 10% |
| IWS | 5% |
| Border control 1 | 60% = TEST+case40/60 |
|  | 100% |
| Seminar or training | 30% |
| IWS | 5% |
| **Midterm** | 60% |
| **Total Midterm** | 100% |
| Seminar or training | 20% |
| Disease history | 20% |
| Border control | 60% |
| **Total Border control 2** | 100% |

**Final grades for discipline:** OAR 60% + Exam 40%

**Exam (2 steps)** – testing (50%) + OSCE (50%)

**сли темы одобрите то дальше все проставлю**

**THEMATIC PLAN AND CONTENT OF PRACTICAL CLASSES**

|  |  |  |  |
| --- | --- | --- | --- |
| № | Theme | **Content** | Books |
|  | 2 | 3 | 4 |
| 1 | Syndromes: urinary, renal failure, arterial hypertension | 1) Anatomy and physiology of the urinary system, age characteristics.Characteristics of urinary syndrome: proteinuria (functional / pathological; selective / non-selective, etc.), hematuria (glomerular / non-glomerular), cylindruria, leukocyturia, bacteriuria. Etiology, pathogenesis, differential diagnosis.Acute renal injury (prerenal, renal, postrenal). Chronic kidney disease. Nephroprotective therapy. Differential diagnosis of AKI and CKD.Pathogenesis of arterial hypertension and the role of hyperfiltration in the progression of kidney disease. Renovascular hypertension, parenchymal hypertension. Hypertension of pregnant women. Treatment of hypertension in renal pathology.Research methods: questioning (complaints, medical history, life history). Physical research methods: examination, palpation, percussion. The main clinical, laboratory and instrumental methods of kidney examination: Kidney ultrasound, computed tomography, kidney biopsy; general urine analysis, bacteriological urine culture, determination of albumin / creatinine ratio; biochemical blood test - electrolytes, total protein, protein fractions, creatinine, urea with the calculation of the filtration function of the kidneys.**IWS:** Algorithm for the diagnosis and differential diagnosis of edema syndrome.Execution form - original report, Power Point presentation / video presentation. | 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 10.
2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 1-3, 19, 21, 30, 46-50.
3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
4. Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, Chapter 7-9.
5. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part I, VIII (Chapter 46), IX.
6. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 1-6; 40-44.
7. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
8. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J. Loscalzo. 2017, 2-56 page, 218-228 page.
9. Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.
10. Macleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst, Section 2, page number 237.
11. Lippincott Illustrated review Pharmacology seventh edition, 2019. Chapter 13, Chapter 17.
12. USMLE Step 2 CK Lecture Notes 2020. Internal Medicine, Chapter 8
 |
| 2 | Nephrotic syndrome | Definition. Etiology, pathogenesis. Morphological classification. Clinical and morphological associations. Differential diagnosis. Forecast. Treatment is immunosuppressive therapy. Forecast. Features of the course in children.Disease of minimal changes, congenital nephrotic syndrome, focal segmental glomerulosclerosis (primary, secondary), membranous nephropathy (primary, secondary). Morphological variants of glomerular diseases.Complication of nephrotic syndrome: hypercoagulability, renal vein thrombosis.Examination program and laboratory data results. Kidney biopsy: clinical indications and contraindications for a kidney biopsy, technique, complications, interpretation of the results of light and electron microscopy, assessment of biopsy by immunohistology. **IWS:** Compilation of clinical tasks with a quiz. Execution form - original report, Power Point presentation / video presentation. Algorithm for the diagnosis of nephrotic syndrome.Execution form - Power Point presentation / video presentation. | 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 4.
2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 4, 26, 30-32.
3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
4. Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, Chapter 47.
5. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part IV.
6. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, 162-189 р.
7. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 24-27.
8. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, page 162-189.
9. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2,  page number 288-315.
10. Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.
11. Macleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst Section 2, page number 237.
12. Lippincott Illustrated review Pharmacology seventh edition, 2019. Chapter 17.
13. Handbook of renal biopsy pathology Alexandr J. Howie, third edition 2020, Chapter 7.
 |
| 3 | Nephritic syndrome | Definition. Etiology, pathogenesis. Clinical classification. Differential diagnosis. Treatment. Forecast. Features of the course in children. Post-streptococcal glomerulonephritis, membranoproliferative, extracapillary glomerulonephritis (RPGN), diffuse proliferative glomerulonephritis.Isolated urinary syndrome: Berger's disease, Alport's syndrome, thin membrane disease (familial hematuria).Kidney damage in rheumatoid arthritis, with SLE, vasculitis associated with ANCA (granulomatous polyangiitis, microscopic polyangiitis, allergic polyangiitis), IgA vasculitis. Sjogren's disease, Fabry, Goodpasture's syndrome.**Diagnostics: examination program and laboratory data results; interpretation of renal tissue biopsy.****IWS:** Compilation of clinical tasks with a quiz.Execution form - original report, Power Point presentation / video presentation.Algorithm for differential diagnosis of hematuria - Power Point presentation / video presentation. | 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 4, 6.2.Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 4, 18, 26, 30-33.3.Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.4.Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, Chapter 47.5.Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part V-VI.6.CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 28-36. 7.Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, page 254-265.8.Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2,  page number 288– 315.9.Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.10.Macleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst, Section 2, page number 237.11.Lippincott Illustrated review Pharmacology seventh edition, 2019. Chapter 17.12.13 th  Edition Chamberlain’s Symtoms and Signs in Clinical Medicine, an introduction to Medical Diagnosis page 137- 160. |
| 4 | Acute kidney injury (AKI) | Acute kidney injury: main causes of AKI, pathogenesis, classification (according to KDIGO. 2012), clinical manifestations, diagnosis, differential diagnosis. Treatment principles. Forecast.Prerenal AKI, renal AKI, postrenal AKI - causes, pathogenesis, differential diagnosis. AKI staging criteria.Diagnostics: general clinical analyzes, electrolytes, acid base balance (anionic difference), instrumental studies. Treatment of life-threatening complications (pulmonary edema, hyperkalemia / hypokalemia, hypernatremia / hyponatremia). Indications for hemodialysis in AKI.**IWS:** Differential diagnosis of prerenal, renal and postrenal acute kidney injury.Execution form - original report, Power Point presentation / video presentation. | * + 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 17.
		2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 27-29.
		3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
		4. Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, Chapter 11,13-14, 22, 24-31, 33-34, 37, 39-40, 48,50-52; 56-63.
		5. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part II.
		6. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 9,12,16.
		7. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, page 104-123.
		8. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2,  page number 288- 315.
		9. Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.
		10. Мacleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst, Section 2, page number 237.
		11. Lippincott Illustrated review Pharmacology  seventh edition, 2019. Chapter 17.
		12. Bates’ Guide to Physical Examination and History taking Twelth Edition 2016. Chapter 571
 |
| 5 | Chronic kidney disease (CKD) | CKD. Etiology. Pathogenesis. A universal mechanism for the progression of kidney disease.Modern classification of chronic kidney disease (according to KDIGO).Clinical symptoms, complications: renal anemia, mineral and bone disorders, acidosis. Treatment principles. Indications for renal replacement therapy - programmed hemodialysis, peritoneal dialysis, kidney transplantation.Calculated formulas of kidney function (GFR) for children and adults (Schawartz Pediatric Bedside eGFR, 2009; CKD-EPI).**IWS:** Nephroprotective therapy for CKD.Execution form - original report, Power Point presentation / video presentation. | 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 18.
2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 27, 51-68.
3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
4. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part III, IX.
5. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 18-22; 49-52.
6. Chronic Renal Disease. 2nd Edition. P. Kimmel M. Rosenberg, 2019, Chapter 1-4р
7. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, page 123-141.
8. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2,  page number 288- 315.
9. Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.
10. Мacleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst, Section 2, page number 237.
11. Lippincott Illustrated review Pharmacology seventh edition, 2019. Chapter 17.
12. Bates’ Guide to Physical Examination and History taking Twelth Edition 2016. Chapter 571.
13. Chronic renal disease Second Edition,

Edited by Paul L.Kimmel and Mark E.Rosenberg 2020, Chapter 2 Page number 19, Chapter 3.  |
| 6 | Urinary tract infection (UTI) | Complicated and uncomplicated urinary tract infections.Acute pyelonephritis, cystitis, asymptomatic bacteriuria.UTI in pregnant women, features of the course.Etiopathogenesis, clinical manifestations, diagnosis, differential diagnosis, basic principles of treatment.**IWS:** Algorithm for the diagnosis and treatment of IMS. Execution form - original report, Power Point presentation / video presentation | 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 12, 14
2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 36-38, 48, 72.
3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
4. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part I, VIII (Chapter 44).
 |
| 7 | Role of the kidneys in homeostasis | The role of the kidneys in the regulation of the acid-base state. Regulation and violations of acid-base balance. Anionic difference. Clinical signs of metabolic acidosis. Diagnostics. Clinical research, diagnostics. Key principles of treatment.Water and electrolyte metabolism: hypernatremia, hyponatremia, hyperkalemia, hypokalemia.**IWS:** Methods for assessing renal acid-base regulation, recent data (article review). Execution form - original report, Power Point presentation / video presentation. | * + 1. Nephrology. Textbook/ Kanatbayeva A.B., Kabulbayev K.A.– М: Littera, 2016. – 416. Page 1-3; Chapter 2, 3
		2. Brenner and Rector's The Kidney, 2-Volume Set, 11th Edition, Alan Yu et al. 2020. Chapter 13-17, 24, 73.
		3. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2, page number 288 – 315.
		4. Critical Care Nephrology, 3rd Edition.**С**.Ronco. 2019, Chapter 54, 64-70.
		5. Nephrology secrets, 4th edition. E. Lerma, M. et al. 2018, Part I, XII (Chapter 46).
		6. CURRENT Diagnosis / Treatment: Nephrology and Hypertension, 2nd Edition. Edgar V. Lerma et al. 2018, Chapter 1-6.
		7. Harrison’s Nephrology and Acid- Base Disorders, 3rd Edition, J. L. Jameson; J.Loscalzo. 2017, page 43-58.
		8. Harrisons Principles of Internal Medicine 19th Edition 2015. Part 2,  page number 288- 315.
		9. Davidson’s Principles & Practice Of Medicine 23th Edition 2018. Part 2, page 461-525.
		10. Мacleod’s Clinical examination 14 th Edition. Edited by J.Alastair Innes, Anna R. Dover, Karen Fairhurst, Section 2, page number 237.
		11. Lippincott Illustrated review Pharmacology seventh edition, 2019. Chapter 17.
		12. Bates’ Guide to Physical Examination and History taking Twelth Edition 2016. Chapter 571.
 |

**Check list HISTORY OF DISEASE (100 units)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **№** | **Criterion** | **10** | **8** | **6** | **4** | **2** |
| ***Excellent*** | ***good*** | ***acceptable*** | ***Demands correction*** | ***Fail*** |
| 1 | Patient complaints: major and minor | Completely and systematically, with an understanding of important details | Accurate and complete | Basic information | Not full Incorrect missed impotent details | missing of main facts |
| 2 | Collecting an anamnesis of the disease |
| 3 | Anamnesis of life |
| 4 | Establishing of the objective status at the time of examination | Effective, organized and focused | Consistently and correctly | Revealing underlying data | Incomplete or not quite correct, not attentive to patient comfort | Incorrect  |
| 5 | Establishing diagnosis | The most complete justification and formulationUnderstands the problem in a complex, connects with the characteristics of the patient | Correct and reasonable from the point of view of the underlying main pathology | Primary diagnosisOrdinary approach | Often irregular establishment of priorities of clinical problems | IncorrectDangerous for patient |
| 6 | Management plan |
| 7 | Treatment plan for a specific patient, considering the underlying and concomitant pathology |
| 8 | Observation diary, milestones and discharge epicrisis | Analytical in assessment and planing | Accurate, concise, organized | Reflects dynamics, new data | Unsystematic Missing of impotent data | Don’t know principles |
| 9 | Medical history presentation | Focused on problems, selection of key facts, complete control of the situation | Precise, focused; choice of facts shows understanding of the problem | The report is in the form, includes all the basic information; | It is a lot of important omissions, often includes the doubtful or unimportant facts | Not possession of a situation, is a lot of important omissions a lot of the specifying questions |
| 10 | Theoretical knowledge in relation to this case | Full understanding of the problem excellent knowledge | Knows differential diagnostics. Knows the basics and features, options | Knows the basics | Incomplete Many mistakes | Larger gaps in knowledge |
|  |  |  |  |  |  |  |

**Check list workshop (100 units)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **№** | **Criterion** | **10** | **8** | **6** | **4** | **2** |
| ***Excellent*** | ***good*** | ***acceptable*** | ***Demands correction***  | ***Fail*** |
| discussion | 1 | Basic theoretical knowledge of fundamental disciplines | The complete understanding. Good reasoning.Full achievement of lesson goals  | Standard reasoning and thinking Complete achievement of basic goals | Digestion of material with not - the basic inaccuraciesin answers. | Assimilation of principles Comprehension of the mistakes and readiness to correct them | Missing of principles misunderstanding |
| 2 | Knowledge of an etiology, pathogenesis |
| 3 | Knowledge of clinical manifestations |
| 4 | Interpretation of physical exam |
| 5 | The differential diagnosis, the choice of tactics of inspection with a comprehension of informational content and reliability of tests  |
| 6 | The choice of tactics of treatment with a comprehension of the mechanism of effect of medicines |
| 7 | Tactics of patient’ treatment: complications, forecast, outcomes |
|  | 8 | Test tasks – 20 questions1 test - 1 score |  |  |  |  |  |
| 9 | Communication in team | Contact and productive member of the team |  |  |  |  |

**Check list Mini – clinical examination (100 units)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **№** | **Criterion** | **10 score** | **8 score** | **6 score** | **4 score** |
|  |  | ***Excellent*** | ***good*** | ***acceptable*** | ***Demands correction*** |
| **History taking** |
| 1. | Complete and correct | Precise, details signs of a disease. Is able to allocate the most important problem.  | Collects the main information, accurate, identifies new problems. | Inexact or not the concentrated.  | Inaccurate, misses the main thing, disharmonious data. |
| 2. | Detalisation | With an attention to convenience of the patient | Reveals the main symptoms | Inexact data | Shows disharmonious reals data, or their absence |
| 3. | systematic | Organized, well concentrated, allocates all clinical manifestations with a comprehension of a course of a disease in a concrete case. | It is not possible to control process of anamnesis taking completely | Allows the patient to take away itself aside at the expense of what time is extended. Uses leading questions (pushes the patient on the answer which can be irregular). | Irregularly asks questions or finishes collecting the anamnesis earlier, without having revealed important problems.  |
| 4 | Time-management | Establishment of priorities of clinical problems for rather short time. | time of history taking drags on | Spends time unefficiently | Does not own a situation in general. |
| **Physical exam** |
| 5. | Step by step and correct | Accurately waste technology of realization carries out correctly with respect for the sequence, sure. | Knows the sequence, shows reasonable skill in preparation and performance of inspection | Inconsistent, uncertain, short owns skills of inspection, refuses to try the main researches | Does not know an order and the sequence of realization of physical survey, does not own its technique |
| 6. | Teacher task\*  |
| 7. | Effectiveness  | Revealed all main physical data and also details  | Revealed the main symptoms | Inexact data | Revealed the data which are not corresponding to objective data |
| 8 | Ability to analyze the identified data | Changes an inspection order depending on the revealed symptoms, specifies, details manifestations. | Assumes a circle of diseases with similar changes without specifications and specification of manifestations. | Cannot apply the obtained data of poll and physical survey to the patient. | Does not carry out the analysis. |
|  |  | **20 score** | **16 score** | **12 score** | **8 score** |
| 9-10 | Communicative skills | safe, confident approach - pays attention to patient's needs and to infection prevention, appropriate use of language when summurising in front of patient.  | Communication is quite effective  | Communication is quite effective with some problems | was not succeeded to find contact with the patient |

**Check list Student independing work (90 units)** **+ bonuses for English and time management**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Criteria** | **20** | **15** | **10** | **5** |
| **1** | **Problem solving** | The organized concentrated, allocates all questions which are falling into to the main revealed problem with a comprehension of a concrete clinical situation | Organized, the concentrated, allocates all questions which are falling into to the main revealed problem, but there is no comprehension of a concrete clinical situation | Not the concentrated, Derivation on the questions which are not falling into to the main revealed problem | Inaccurate, misses the main thing, disharmonious data. |
| **2** | **Information** | All necessary information on a subject in the free, serial, logical manner is completely conveyed The product form is adequately chosen | All necessary information in a logical manner, but with shallow inaccuracies is conveyed | All necessary information on a subject is explained chaotically, with not gross errors | Important information on a subject, gross errors is not reflected |
| **3** | **Significance** | Material is chosen on the basis of authentically established facts. Manifestation of a comprehension on the level or quality of proofs | Some conclusions and the conclusions are formulated on the basis of assumptions or the incorrect facts. There is no complete comprehension of level or quality of proofs | Not the sufficient comprehension of a problem, some conclusions and the conclusions are based on the inexact and not proved data – doubtful resources are used | Conclusions and the conclusions are not proved or irregular |
| **4** | **Logic**  | logical and well reasoning, has internal unity, provisions in a product follow one of another and are logically interdependent between themselves | Has internal unity, provisions of a product one of another follows, but there are inaccuracies | There is no sequence and logicality in statement, but it is possible to keep track of the main idea | Jumps from one on another, it is difficult to catch the main idea |
| **5** | **Recourses**  | Literary data are submitted in logical interrelation, show deep study of the main and padding informational resources | Literary data show study of the main literature | Only ordinary recourses | Inconsistency and randomness in statement of data, an inconsistencyThere is no knowledge of the main textbookUsing of Google |
| **6** | **Practical application** | High | good | moderate | no |
| **7** | **Patient focusing** | High | good | moderate | no |
| **8** | **Applicability in future practice** | High | good | moderate | no |
| **9** | **Presenation** | Correctly, to the place all opportunities of Power Point or other e-softs, the free possession of material, a sure manner of statement are used | It is overloaded or are insufficiently used visual materials, inexact possession of material | Visual materials are not informative  | Does not own material, is not able to explain it |
| **bonus** | **English** | The product is fully submitted in English (checked by the head of the department)**+ 10-20 points** depending on the quality | The product was prepared in English, delivered in rus / kaz**+ 5-10 points** depending on the quality | When preparing the product, English-language sources were used**+ 2-5 points** depending on the quality |  |
| **bonus** | **Time management\*** | 10For before deadline | In time | Good quality but a little late Minus 2-4  | After deadline more than 24 hours Minus 10  |
| **bonus** | **Rating\*\*** **Be sure to explain why this bonus is awarded** | Additional points (up to 10 points) | Outstanding work, for example: The best work in groupCreative approachInnovative approach to realization of a taskAccording to the proposal of group |
|  | \* Term - determined by the teacher, as a rule - the day of midterm control\*\* thus, the maximum you can get 90 points, to get above 90 - you need to show a result **higher than expected** |

**Tasks for the IWS, the Schedule of their implementation, Methodical instructions to them**

**100 hours**

**Independent work of the student during school hours:**

\* preparation of thematic presentations for conferences

\* maintenance of medical records

\* participation in SSS Department, presentations at conferences

\* participation in scientific conferences, symposia, etc.

\* practice of practical skills In the center of practical skills on simulation scenarios

**Extracurricular independent activity:**

\* study of special medical literature

\* work with electronic information resources, including medical Internet portals

Extracurricular independent work is assessed based on the results of the preparation of the clinical analysis (checklist)

 The deadline is one day before the midterm control.

**Map of educational and methodological support of the discipline**

|  |  |  |  |
| --- | --- | --- | --- |
| **№** | **Information resources** | Number of students studying the discipline (expected set) | Number in the library of KazNU |
| **kaz** | **ru** | **eng** |
|  | **Educational literature (title, year of publication, authors) in electronic form** |  |  |  |  |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |
| 8 |  |  |  |  |  |
| 9 |  |  |  |  |  |
|  | **Internet resources:** |  |  |  |  |
| 10 | Medscape.com Clinical.corroption.comOxfordmedicine.com[Uptodate.com](http://www.uptodate.com)[research.nhgri.nih.gov](http://research.nhgri.nih.gov/)  [ncbi.nlm.nih.gov/PubMed/](http://www.ncbi.nlm.nih.gov/PubMed/) [medline.com](http://www.medline.com)Clinical Learning by ELSEVIER |  |  |  |  |