SYLLABUS

Name: ***Patomorfologia (1655-Lek31PATO-J)***
Name in Polish:
Name in English: ***Pathology***

Information on course:

Course offered by department: Department of Pathology
Course for department: Faculty of Medicine
Term: Academic Year 2024/25
Cordinator of course edition: prof. dr hab. Dariusz Grzanka

Default type of course examination report:

Grading

Language:

English

Course homepage:

https://www.wl.cm.umk.pl/kizpk/

Short description:

The purpose of the Pathology course is studying and understanding etiology, pathogenesis, morphology and functional changes of diseases. Topics of the lectures focus on general pathology. Seminars and microscopic tutorials aim at the practical approach to the presented knowledge. Laboratory tutorials focus on preparing and processing histopathological slides as well as practicing additional pathology techniques (immunochistochemistry and molecular pathology techniques) used in the laboratory.

Description:

The aim of the lectures is to obtain and consolidate knowledge associated with pathology: basic knowledge of routine and special techniques used in pathological examination, cell changes, adaptation processes, cell degeneration, mechanisms of inflammation and morphology, tissue regeneration processes, hemodynamic disorders, thromboembolism, shock and DIC morphology, neoplasms, environmental pathology, cardiovascular pathology, systemic pulmonary and heart and vasculars.
The aim of the seminars is to obtain and consolidate knowledge and discuss selected topics associated with pathology: cell changes, adaptation processes, hemodynamic disorders, death and autopsy technique, acute inflammation, chronic inflammation, laboratory techniques, diseases of the immune system, neoplasms pediatric and genetic diseases, systemic pulmonary and heart and vasculars..
The aim of the tutorials is to gain practical skills associated with pathology: sample collection for pathological tutorials post-autopsy analysis, laboratory classes, genetic cytology in telemedicine - case study, assessment of gynecological cytology in the field of inflammatory changes, laboratory and microscopic tutorials in the field of adaptive changes and hemodynamic disorders, inflammation acute and chronic, neoplasms, pathologies of the respiratory system, heart and vessels, and childhood diseases.

Bibliography:

1. Vinay Kumar, Abul K. Abbas, Jon C. Aster, Andrea T. Deyrup , Robbins & Kumar Basic Pathology 11th Edition. Elsevier, 2022.
Supplementary literature:
1. Kumar V, Abbas A, Aster J. Robbins & Cotran Pathologic Basis of Disease, 9th Edition. Elsevier, 2014.
2. Histopathological atlas: https://cmumk.cancercenter.ai/app/f643c19e-3d40-42a7-a9c7-4e34ba8b0177

Assessment methods and assessment criteria:

Seminars and Tutorials:
One colloquium (0 – 35 points), each consisting of two parts:
1. Theoretical: (0-30 points): W1 – W10
2. Practical (0-5 points): W3, U1 – U5
Entrance tests (0-3 points): W1-W10, starting at the beginning of all of the seminars except the first one. At the first seminar, the entrance test will be held at the end of the seminar.
Lectures:
Lecture test (0 – 35 points): W1 – W10

Extended observation/Activity: (0-10 pkt.; > 50%): K1 – K6

To obtain course credit one has to get a total score of at least 60% (in colloquiums and lecture test altogether) and positive score for activity

The rating is based on the following grading scale:
Percentage points Rating

92≤…<100 very good (5)

88≤…<92 Fairly good (4,5)

80≤…<88 Good (4)

71≤…<80 Satisfactory plus (3,5)

60≤….<71 Satisfactory (3)

0…<60 Unsatisfactory (2)

Total student workload

1. Workload associated with classes that require direct presence of the academic teachers:
- lectures: 25 hours
- seminars: 30 hours
- tutorials: 30 hours
- time required for student's assessment: 4 hours
Total workload associated with classes that require direct presence of the academic teachers: 89 hours, equal to 3,2 ECTS

2. Student's workload:
- participation in lectures: 25 hours
- participation in seminars: 30 hours
- participation in tutorials: 30 hours
- preparations for tutorials (literature reading, preparing the tasks): 20 hours
- preparations for assessment and time required for the assessment: 30 + 4 = 34 hours
Total student's workload: 139 hours, equal to
5 ECTS

3. Workload associated with scientific research:
- scientific literature reading: 8 hours
- participation in lectures (including research results and scientific reports in the field of pathology): 25 hours
- participation in tutorials (including results of the scientific reports in the field of pathology): 30 hours
- preparations for assessment (including scientific papers in the field of pathology): 30 hours
Total workload associated with scientific research: 93 hours, equal to 3,35 ECTS
4. Time required for preparations and participation in the assessment process:
- preparations for assessment: 30 + 4 = 34 hours (1,22 ECTS)

5. Student's workload of a practical character:
- participation in tutorials (including credit for practical classes)
15 + 15+1 =31 godzin
Total student's workload of a practical character:
31 hours, equal to 1,12 ECTS

6. Time required for the obligatory student internship:
not applicable

Learning outcomes - knowledge

W1: Distinguishes cell cycle stages, cell injury and tissue regeneration, adaptation, aging and degeneration processes, apoptosis and necrosis, in relation to clinical picture and presentation of the selected diseases (B.W18, B.W23, C.W27, C.W28, C.W29, C.W47, C.W48, C.W50)
W2: Distinguishes stem cells role in regeneration and carcinogenic processes (B.W19)
W3: Explains the link between pathological factors and clinical picture of the selected diseases (B.W25, C.W30, C.W32, C.W33, C.W34, C.W45)
W4: Classifies common pediatric diseases and explains their pathogenesis (C.W27, C.W9, E.W3, E.W6, E.W37, F.W1)
W5: Deduces pathogenesis of a disease based on its epidemiology (including infectious risk factors) (C.W13, E.W1, E.W23)
W6: Lists types of hypersensitivity reactions and distinguishes types of autoimmune diseases (C.W23, E.W34)
W7: Analyses tumor biology of the selected cases, focusing on immunological surveillance (C.W24, C.W41, C.W42, E.W24, E.W25)
W8: Uses professional pathologic nomenclature (C.W26)
W9: Interprets patient's rights according to medical documentation, included in a deceased as well as in preserved human tissues collected intravitally (D.W17, G.W5, G.W11)
W10: Classifies common cardiovascular system diseases, connective tissue diseases, hypersensitivity diseases and hematopoietic system diseases in adults (E.W7)
W11: Defines organ pathology issues, gross and microscopic pictures and clinical course of the pathologic lesions in lungs and male genital system (C.W31, C.W34)

Learning outcomes - skills

U1: Analyses microscopic image using a light microscope and distinguishes selected images and diseases based on that (A.U1, A.U2, C.U9)
U2: Analyses immunohistochemical stains of the selected disorders (C.U8)
U3: Formulates diagnosis based on a clinical picture (patient's medical history, radiological imaging, laboratory test results and pathological examination) (C.U11)
U4: Analyses pathomechanism of the selected diseases, including shock, describes changes in body function as well as patient's immunological response (C.U12, C.U20).
U5: Plans pathological differentia diagnosis of the selected diseases in adults and children (E.U12)
U6: Writes a referral that requests selected pathological examinations: histopathological and autopsy; writes a synoptic report on the selected disorders as well as an autopsy report (E.U38)

Learning outcomes - social competencies

K1: Critically assesses medical information sources (K_K01)
K2: Tries to find a solution to ethical problems associated with pathological examination (K_K02)
K3: Understands what being responsible for human health and life means and puts patient's well-being first (K_K02, K_K04) – in-class
K4: Understands the importance of medical information obtained during pathological examination and what being responsible for it means (K_K05).
K4: Collaborates with a team of specialists in order to reach a final diagnosis Współpracuje z zespołem specjalistów w celu ustalenia ostatecznej diagnozy (K_K06)
K5: Has a habit of self-studying (K_K07)
K6: Formulates conclusions based on their observations (K_K10)

Learning outcomes - social competencies

Teaching methods

Lectures:
• informative lecture
Seminars:
• case study
• discussion
Tutorials:
• demonstration;
• classes;
• simulation methods (case study; simulation case);
• laboratory classes in-cl

Observation/demonstration teaching methods

- display

Expository teaching methods

- problem-based lecture
- informative (conventional) lecture

Exploratory teaching methods

- laboratory
- practical
- seminar
- case study

Type of course

compulsory course

Prerequisites

Students beginning the Introduction to Pathology course should have knowledge of anatomy, histology, genetics, biochemistry and human embryology at a first-year medical student level (according to the curriculum) and of physiology at a high school level.

Information on course edition:

Default type of course examination report:

Grading

Homepage of course edition:

https://www.wl.cm.umk.pl/kizpk/

Short description:

The purpose of the Pathology course is studying and understanding etiology, pathogenesis, morphology and functional changes of diseases. Topics of the lectures focus on general pathology. Seminars and microscopic tutorials aim at the practical approach to the presented knowledge. Laboratory tutorials focus on preparing and processing histopathological slides as well as practicing additional pathology techniques (immunochistochemistry and molecular pathology techniques) used in the laboratory.

Description:

The aim of the lectures is to obtain and consolidate knowledge associated with pathology: basic knowledge of routine and special techniques used in pathological examination, cell changes, adaptation processes, cell degeneration, mechanisms of inflammation and morphology, tissue regeneration processes, hemodynamic disorders, thromboembolism, shock and DIC morphology, neoplasms, environmental pathology, cardiovascular pathology, systemic pulmonary and heart and vasculars.
The aim of the seminars is to obtain and consolidate knowledge and discuss selected topics associated with pathology: cell changes, adaptation processes, hemodynamic disorders, death and autopsy technique, acute inflammation, chronic inflammation, laboratory techniques, diseases of the immune system, neoplasms pediatric and genetic diseases, systemic pulmonary and heart and vasculars..
The aim of the tutorials is to gain practical skills associated with pathology: sample collection for pathological tutorials post-autopsy analysis, laboratory classes, genetic cytology in telemedicine - case study, assessment of gynecological cytology in the field of inflammatory changes, laboratory and microscopic tutorials in the field of adaptive changes and hemodynamic disorders, inflammation acute and chronic, neoplasms, pathologies of the respiratory system, heart and vessels, and childhood diseases.

Details of classes and study groups

Lecture (25 hours)

The classes homepage

https://www.wl.cm.umk.pl/kizpk/

Bibliography:

1. Vinay Kumar, Abul K. Abbas, Jon C. Aster, Andrea T. Deyrup , Robbins & Kumar Basic Pathology 11th Edition. Elsevier, 2022.
Supplementary literature:
1. Kumar V, Abbas A, Aster J. Robbins & Cotran Pathologic Basis of Disease, 9th Edition. Elsevier, 2014.
2. Histopathological atlas: https://cmumk.cancercenter.ai/app/f643c19e-3d40-42a7-a9c7-4e34ba8b0177

Learning outcomes:

Lectures:
W1: Distinguishes cell cycle stages, cell injury and tissue regeneration, adaptation, aging and degeneration processes, apoptosis and necrosis, in relation to clinical picture and presentation of selected diseases (B.W18, B.W23, C.W27, C.W28, C.W29, C.W47, C.W48, C.W50)
W2: Distinguishes stem cells role in regeneration and carcinogenic processes (B.W19)
W3: Explains the link between pathological factors and clinical picture of the selected diseases (B.W25, C.W30, C.W32, C.W33, C.W34,

C.W45+
W4: Classifies common pediatric diseases and explains their pathogenesis (C.W27, C.W9, E.W3, E.W6, E.W37, F.W1)
W5: Deduces pathogenesis of a disease based on its epidemiology (including infectious risk factors) (C.W13, E.W1, E.W23)
W6: Lists types of hypersensitivity reactions and distinguishes types of autoimmune diseases (C.W23, E.W34) g
W7: Analyses tumor biology of the selected cases, focusing on immunological surveillance (C.W24, C.W41, C.W42, E.W24, E.W25)
W8: Uses professional pathologic nomenclature (C.W26)
W9: Interprets patient's rights according to medical documentation, included in a deceased as well as in preserved human tissues collected intravitally (D.W17, G.W5, G.W11)
W10: Classifies common cardiovascular system diseases, connective tissue diseases,
K1: Critically assesses medical information sources (K_K01)

Classes topics:

1. Introduction to pathomorphology, its history, classification, and the techniques used in pathomorphological diagnostics . Pathogenesis of diseases. The role of pathology in clinical practice. Principles of the pathomorphological diagnostics department – prof. Dariusz Grzanka, MD, PhD.
2. The cell as the fundamental unit in health and disease. Cell damage and cell health – Anna Klimaszewska-Wiśniewska, PhD.
3. Necrosis. Adaptive mechanisms. Tissue repair processes – prof. Dariusz Grzanka, MD, PhD.
4. Mechanisms of inflammation and morphological markers – Natalia Skoczylas-Makowska, MD, PhD.
5. Circulatory disorders. Morphological markers: thromboembolic diseases, shock, and disseminated intravascular coagulation syndrome (DIC) – Jakub Jóźwicki, MD, PhD.
6. Neoplasia. Fundamentals of carcinogenesis and correlation with morphological characteristics. Morphological indicators of tumor-host reactions. Terminology. Benign and malignant neoplasms – prof. Dariusz Grzanka, MD, PhD.
7. Genetic changes in cancer. Initiating and coexisting mutations, epigenetic modifications. Carcinogenesis as a multistep process – Paulina Antosik, PhD.
8. Basics of tumor classification. Progression, staging, and grading – Jakub Jóźwicki, MD, PhD.
9. Immunohistochemistry in pathomorphology – Paulina Antosik, PhD.
10. Disorders of the immune system – Jakub Jóźwicki, MD, PhD.
11. Knowledge test from lectures.
12. Knowledge test from seminars and tutorials (Colloquium)

Teaching methods:

- serving
- lecture

Study groups details

missing study groups details

Tutorial (30 hours)

The classes homepage

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Bibliography:

1. Vinay Kumar, Abul K. Abbas, Jon C. Aster, Andrea T. Deyrup , Robbins & Kumar Basic Pathology 11th Edition. Elsevier, 2022.
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2. Histopathological atlas: https://cmumk.cancercenter.ai/app/f643c19e-3d40-42a7-a9c7-4e34ba8b0177

Learning outcomes:

utorials:
U1: Analyses microscopic image using a light microscope and distinguishes selected images and diseases based on that (A.U1, A.U2, C.U9)
U2: Analyses immunohistochemical stains of selected disorders (C.U8)
U3: Formulates diagnosis based on a clinical picture (patient's medical history, radiological imaging, laboratory test results and pathological examination) (C.U11) –
U4: Analyses pathomechanism of the selected diseases, including shock, describes changes in body function as well as patient's immunological response (C.U12, C.U20).
U5: Plans pathological differentia diagnosis of the selected diseases in adults and children (E.U12)
U6: Writes a referral that requests selected pathological examinations: histopathological and autopsy; writes a synoptic report on the selected disorders as well as an autopsy report (E.U38) and in-classK1: Critically assesses medical information sources (K_K01)
K2: Tries to find a solution to ethical problems associated with pathological examination (K_K02)
K3: Understands what being responsible for human health and life means and puts patient's well-being first (K_K02, K_K04)
K4: Understands the importance of medical information obtained during pathological examination and what being responsible for it means (K_K05).
K4: Collaborates with a team of specialists in order to reach a final diagnosis (K_K06)
K5: Has a habit of self-studying (K_K07)
K6: Formulates conclusions based on their observations (K_K10)

Classes topics:

1. Autopsy section practices or tissue sample collection - according to schedule
2. Microscopic Practice - Gynecological cytology in telemedicine (case study) - 1 hour Jakub Jóźwicki, MD, PhD/ Autopsy - 1 hour (according to the duty)
3. Introduction to gynecological cytology - Jakub Jóźwicki, MD, PhD / microscopic practice in gynecological cytology - inflammatory changes - Martyna Parol, PhD – 1 hour
4. Laboratory Practice: Histopathological techniques – Paulina Antosik, PhD.
5. Science tutorials – Anna Klimaszewska-Wiśniewska, PhD
6. Microscopy Practice: Adaptive changes and hemodynamic disorders (MD)
7. Microscopy Practice: acute and chronic inflammation (MD)
8. Microscopy Practice: Neoplasms (MD)
9. Microscopy Practice: Pathology of the Respiratory Tract, pathology of heart and childhood diseases (MD)
10. Microscopy Practice: Summary of microscopic practice (MD)

Teaching methods:

- discussion,
- case study
- show
- experiencing
- laboratory

Study groups details

Group number 1

Class instructors:

missing course instructor

Group number 2

Class instructors:

missing course instructor

Group number 3

Class instructors:

missing course instructor

Group number 4

Class instructors:

missing course instructor

Group number 5

Class instructors:

missing course instructor

Group number 6

Class instructors:

missing course instructor

Group number 7

Class instructors:

missing course instructor

Group number 8

Class instructors:

missing course instructor

Group number 9

Class instructors:

missing course instructor

Group number 10

Class instructors:

missing course instructor

Group number 11

Class instructors:

missing course instructor

Group number 12

Class instructors:

missing course instructor

Seminar (30 hours)

The classes homepage

https://www.wl.cm.umk.pl/kizpk/

Bibliography:

1. Vinay Kumar, Abul K. Abbas, Jon C. Aster, Andrea T. Deyrup , Robbins & Kumar Basic Pathology 11th Edition. Elsevier, 2022.
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2. Histopathological atlas: https://cmumk.cancercenter.ai/app/f643c19e-3d40-42a7-a9c7-4e34ba8b0177

Learning outcomes:

Seminars:
W1: Distinguishes cell cycle stages, cell injury and tissue regeneration, adaptation, aging and degeneration processes, apoptosis and necrosis, in relation to clinical picture and presentation of the selected diseases (B.W18, B.W23, C.W27, C.W28, C.W29, C.W47, C.W48, C.W50)
W2: Distinguishes stem cells role in regeneration and carcinogenic processes (B.W19)
W3: Explains the link between pathological factors and clinical picture of the selected diseases (B.W25, C.W30, C.W32, C.W33, C.W34, C.W45)
W4: Classifies common pediatric diseases and explains their pathogenesis (C.W27, C.W9, E.W3, E.W6, E.W37, F.W1)
W5: Deduces pathogenesis of a disease based on its epidemiology (including infectious risk factors) (C.W13, E.W1, E.W23)

W6: Lists types of hypersensitivity reactions and distinguishes types of autoimmune diseases (C.W23, E.W34) =
W7: Analyses tumor biology of the selected cases, focusing on immunological surveillance (C.W24, C.W41, C.W42, E.W24, E.W25) –
W8: Uses professional pathologic nomenclature (C.W26)
W9: Interprets patient's rights according to medical documentation, included in a deceased as well as in preserved human tissues collected intravitally (D.W17, G.W5, G.W11)
W10: Classifies common cardiovascular system diseases, connective tissue diseases, hypersensitivity diseases and hematopoietic system diseases in adults (E.W7
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U2: Analyses immunohistochemical stains of selected disorders (C.U8) and in-class U3: Formulates diagnosis based on a clinical picture (patient's medical history, radiological imaging, laboratory test results and pathological examination) (C.U11)
U4: Analyses pathomechanism of the selected diseases, including shock, describes changes in body function as well as patient's immunological response (C.U12, C.U20).
U5: Plans pathological differentia diagnosis of the selected diseases in adults and children (E.U12)
K1: Critically assesses medical information sources (K_K01)
K2: Tries to find a solution to ethical problems associated with pathological examination (K_K02)

Classes topics:

1. Seminar - HISTOPATHOLOGICAL TECHNIQUES IN PATHOMORPHOLOGICAL DIAGNOSIS – Paulina Antosik, PhD.
2. Seminar - INTRODUCTION TO PATHOLOGY AND ADAPTIVE CHANGES – Jakub Jóźwicki, MD, PhD.
3. Seminar - CIRCULATORY DISORDERS – Natalia Skoczylas-Makowska, MD, PhD.
4. Seminar - ACUTE INFLAMMATION – Radosław Wujec, MD.
5. Seminar - CHRONIC INFLAMMATION AND TISSUE REPAIR – Kacper Naglik, MD.
6. Seminar - NEOPLASMS – Jakub Jóźwicki, MD, PhD.
7. Seminar - PATHOLOGY OF THE RESPIRATORY TRACT – Izabela Neska-Długosz, MD.
8. Seminar – PATHOLOGY OF HEART AND VASCULAR DISEASES - Natalia Skoczylas-Makowska, MD, PhD
9. Seminar - CHILDHOOD DISEASES – Natalia Skoczylas-Makowska, MD, PhD.
10. Seminar - BIOMARKERS IN PATHOMORPHOLOGICAL DIAGNOSIS – Anna Klimaszewska-Wiśniewska, PhD.

Teaching methods:

- serving
- seminar
- presentation

Study groups details

Group number 1

Class instructors:

missing course instructor

Group number 2

Class instructors:

missing course instructor

Group number 3

Class instructors:

missing course instructor

Element of course groups in various terms:

Course group description	First term	Last term
missing group description in English (16550147-3-O)	2022/23	
All university courses (0000-ALL)	2022/23	

Course credits in various terms:

<without a specific program>

Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	5	2022/23	