



Sveučilište u Rijeci
University of Rijeka



Sveučilište u Rijeci • Fakultet dentalne medicine
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Course: Pathology

Course Coordinator: Asst. Prof. Manuela Avirović, MD, PhD

Department: Department of Pathology

Study program: University Integrated Undergraduate and Graduate Study of Dental Medicine in English

Study year: 2nd

Academic year: 2023/24 TURNUS (08.04. 2023.- 27.05.2023.)

SYLLABUS

Course information (brief course description, general guidelines)

Pathology is a obligatory course of the Integrated Undergraduate and Graduate University Study of Dental Medicine in English. The course lasts 7 weeks (140 hours) and is worth 10 ECTS credits. The course is held at the Department of Pathology of the Faculty of Medicine in Rijeka.

The aim of the course is to learn about the morphological and structural changes of the human body in various diseases through topographic and systematic pathological anatomy and pathohistology.

Course content:

The Basic Pathology course introduces students to the principles, pathophysiologic mechanisms and gross and microscopic pathology of the Cell as a Unit of Health and Disease, Inflammation and Repair, Hemodynamic Disorders, Thromboembolism, and Shock, Diseases of the Immune System, Neoplasia, Genetic and Pediatric Diseases, Environmental and Nutritional Diseases, General Pathology of Infectious Diseases. These principles of basic pathology are then further applied, developed and integrated into the subsequent pathology organ system course, through didactic lectures in organ system pathology, case reports to review classical examples of surgical specimens, emphasizing clinic-pathologic correlation especially on oral cavity and teeth tissue diseases. The course includes lectures, laboratories, and microscopic tutorials. The histological specimens are presented in the form of virtual teaching. Microscopic examination of the tissue includes a review of standard histological as well as slides colored with special techniques. The macroscopic examination of the tissue is performed in the laboratory of the Department of Pathology, on the samples exhibited in the exercise room of the Institute and during the autopsy. Students participate in clinical pathological discussions about autopsy and laboratory work at the institute that is part of daily routine work. During the course the student acquires knowledge and skills in the application of nomenclature of pathological entities and diseases. The acquired knowledge and skills should provide a better understanding of the causes and mechanisms of the disease required for accurate diagnosis.

Instruction

The course is composed of 50 hours of lectures, 40 hours of seminars and 30 hours of practicals, a total of 120 hours. A student is obliged to regularly attend all forms of instruction. Moreover, preparation for the course

content, which is going to be discussed during seminars and practicals, is obligatory. Continuous assessment will be carried out during seminars and practicals. During the course 4 mandatory written and 2 mandatory oral and practical exams will be conducted. At the end of the course the final exam is a written testing.

Assigned reading:

1. Robbins Basic Pathology 10th Edition Authors: Vinay Kumar Abul Abbas Jon Aster Elsevier 2017, ISBN: 9780323353175
2. Virtual pathology; Atlas iz patologije, Katedra za patologiju, Medicinski fakultet u Rijeci, <http://mikromed.uniri.hr>

To enhance the meaning of the lectures, the student is expected to read the pertinent text material prior to the lecture.

Optional / additional reading:

1. GPS – General Pathology Synopsis (Pathology Self-Assessment question's Handbook)
2. SPS – Systemic Pathology Synopsis (Systemic Pathology Self-assessment question's Handbook).
3. Web –online content microscopic and macroscopic content <http://mikromed.uniri.hr>

Patologija. I. Damjanov, S. Seiwerth, S. Jukić, M. Nola. Peto, prerađeno i dopunjeno izdanje, Medicinska naklada, Zagreb 2018.

Course teaching plan:

List of lectures (with titles and description):

GENERAL PATHOLOGY

L1,2 Cellular Pathology: An Introduction to Pathology, An Overview of Cellular Pathology

Cell injury: causes, mechanisms, reversible and irreversible cell injury. Intracellular accumulations. Pathologic calcification.

Learning outcomes:

Students will be able to:

1. Define all forms of cell damage.
2. Compare the reversible and irreversible cell damage.
3. Describe all forms of cellular adaptation and differences between them.
4. Define the role of apoptosis in physiological and pathological conditions.

L3 Acute Inflammation: Introduction, inflammation classification, inflammatory cells, mediators of acute inflammation, classical and systemic signs of inflammation, morphological patterns of acute inflammation, outcomes of acute inflammation.

L4 Chronic inflammation: mediators of chronic inflammation, tissue repair, causes of chronic inflammation, morphological forms of chronic inflammation, systemic effects of inflammation.

Learning outcomes:

Students will learn to

1. Define inflammation.
2. Specify inflammation types.
3. Explain the morphological forms of inflammation.
4. Describe course of acute and chronic inflammation.

L5 Hemodynamic disorders: hyperemia and congestion, edema, dehydration, hemorrhage, hemostasis and thrombosis, infarction, shock.

Learning outcomes:

Students have to

1. Define edema, describe and explain mechanisms of edema formation and its clinical features.
2. Define hyperemia and congestion and explain pathogenesis.
3. Define thrombosis with predisposing factors for the creation of a thrombus, to list the different types of thromb and their morphology, and indicate possible complications.
4. Define an infarct, classification, explain the pathophysiology, pathohistological and clinical features.
5. Define, classify and explain different stages of shock. List and describe morphological and clinical features.

L6 Neoplasm 1: nomenclature, characteristics of benign and malignant neoplasms, epidemiology, hallmarks of cancer.

Learning outcomes:

Students have to

1. Define the term of neoplasms and histogenic classification of neoplasms.
2. Describe the principles of nomenclature and classification of neoplasms based on macroscopic and histopathological structure.
3. Describe the typical features of benign and malignant neoplasms.
4. Describe growth patterns and types of tumor metastasis.
5. Explain the principles on which the clinical and histological grading of neoplasms is based.

L7 Neoplasm 2 etiology of cancer: cancerogenic agents, clinical aspects of neoplasia.

Molecular Biology in Diagnosis of Diseases: Methodology, Application in Neoplasm Diagnosis.

Learning outcomes:

Students will learn to.

1. Describe carcinogenesis processes.
2. Identify substances (carcinogens) that are associated with cancer.
3. Identify viruses associated with carcinogenesis.
4. Analyze Viral Carcinogenesis Mechanisms on Human Papilloma Virus (HPV) Example.
5. Explain the effect of oncogenes in cell growth and proliferation control.
6. Describe the action of tumor-suppressor genes.
7. Identify hereditary and somatic remodeling in genomes - tumor growth promoters.

L8 Autoimmune diseases: cells and tissues of immune system, autoimmune diseases, rejection of transplants, acquired immunodeficiency syndrome, amyloidosis.

Learning outcomes:

Students will learn to

1. Classify autoimmune diseases with examples of hypersensitivity reactions.
2. Explain mechanism of transplantation reaction.
3. Identify the most important features of Systemic Lupus Erythematosis, Sjögren syndrome and Systemic sclerosis.
4. Classify immunodeficient states.
5. Explain mechanism of the acquired immune deficiency syndrome.
6. Describe the characteristics of amyloidosis, classify amyloidosis.

L9 Developmental and genetic diseases: Mendelian disorders, complex multigenic disorders.

Learning outcomes:

Students will be able to

1. List and recognize environmental teratogens.
2. Describe chromosomal disorders (frequency and types of most common).
3. Describe and determine the origin and causes of numerical and structural chromosomal disorders.
4. Cytogenetic and screening tests in prenatal diagnosis.

6. Classify and describe genetic disorders inherited by Mendel's (autosomal dominant, autosomal recessive and sexually-inherited inherited diseases).
7. Classify and describe the morphological characteristics of the most common genetic syndrome with atypical inheritance (caused by repeated triplets, mitochondrial gene mutations, imprinting disorders).
8. Classify and describe the morphological characteristics of diseases caused by polygenic inheritance.

L10 General pathology of infectious diseases: general principles of microbial pathogenesis, the microbiome, techniques for identifying infectious agents, infectious diseases, transmission and dissemination of microbes, how microorganisms cause diseases, immune evasion by microbes, spectrum of inflammatory responses to infection.

Learning outcomes:

Students will learn about:

1. Ways of immune evasion by microbes.
2. Injurious effects of host immunity.
3. Morphological changes in viral infections / cytopathic effect of viral infections.
4. Morphological changes in bacterial infections.
5. Patterns of tissue injury.

SYSTEMIC PATHOLOGY and ORAL CAVITY PATHOLOGY

L11 Ischemic heart disease, Rheumatic heart disease.

Learning outcomes:

Students will be able to

1. Define and classify ischemic heart disease, epidemiological data and known causes of risk factors of ischemic heart disease.
2. Define and classify angina pectoris, state the causes and describe the morphological and clinical characteristics of angina pectoris.
3. Define and classify myocardial infarction, describe and recognize macroscopic and microscopic morphological characteristics of myocardial infarction.
4. Explain the correlation between coronary thrombosis and localization of the infarct, describe, recognize and explain complications of the infarction and correlation with the clinical status.
4. Define chronic ischemic heart disease and severe cardiac death with epidemiological characteristics, causes and clinics, describe morphological characteristics.
5. Define rheumatic fever and rheumatoid heart disease, provide epidemiological data, explain pathogenesis, describe their morphological macroscopic and microscopic changes, cite complications and their association with clinical outcome.

L12 Blood vessel diseases: structure and function of blood vessels, hypertensive vascular disease, vascular wall response to injury, arteriosclerosis, atherosclerosis, aneurisms and dissections, vasculitis.

Learning outcomes:

Students will be able to

1. Define and classify arteriosclerosis.
2. Define and explain atherosclerosis pathogenesis, classify and report complications.
3. Define vasculitis, classify vasculitis, state the causes, and explain vasculitis pathogenesis.

L13 Head and neck pathology and Respiratory system

Learning outcomes:

Students will learn to

1. Define and classify inflammations and tumors of pharyngs and laryngs.
2. Define and classify restrictive/obstructive lung diseases, include epidemiological data, causes, explain the disease pathogenesis, describe morphological changes and clinical status.

3. Define and classify vascular lung diseases.

L14 Endocrine System

Learning outcomes:

Students will be able to :

1. Classify and describe endocrine gland function disorders.
2. Specify thyroid function disorders and explain etiopathogenesis and morphology of goitre and thyroiditis.
3. Specify and describe thyroid neoplasms.
4. Specify adrenal gland tumors.

L15 Lung tumors.

Learning outcomes:

1. Classify lung and pleural tumors, indicate epidemiological data, causes, risk factors, describe macroscopic morphological characteristics and explain the relationship to the clinical presentation.
2. Define and classify neuroendocrine lung tumors, describe morphological and clinical features.

L16 Breast diseases

Learning outcomes:

Students will be able to :

1. Recognize breast inflammation, fibrocystic changes, apply acquired knowledge by emphasizing clinical importance of fibrocystic changes and proliferative breast disease and the risk of developing breast cancer.
2. Classify and describe breast tumors and specify the prognostic factors of breast cancer.
3. Describe and explain gynecomastia and breast cancer in men.

L17 Liver

Biliary system and pancreas

Learning outcomes:

Students will learn to

1. List and define circulatory disorders .
2. List and define viral hepatitis and toxic damage.
3. Define cirrhosis of the liver.
4. List liver tumors.
4. List inflammatory and tumor diseases of biliary system and pancreas.

L18 Kidney: glomerular, tubular and interstitial diseases, tumors.

Learning outcomes:

Students will be able to

1. Classify and describe congenital urinary tract anomalies.
2. Classify cystic kidney disease.
3. Classify glomerular and tubulointerstitial diseases.
4. Classify obstructive diseases of urotract with emphasis on urolithiasis..
5. Classify kidney tumors (tumors of the origin of kidney tubules, urothelial, Wilms tumor).
6. describe inflammatory diseases of the bladder and urethra, and tumors.

L19 Female Genital System:

Learning outcomes:

Students will learn about the:

1. Etiology, pathogenesis and pathology of cervical neoplasms.
2. Etiopathogenesis, pathology, classification and clinical correlation of endometrial hyperplasia and cancer.
3. Classification and pathology of ovarian neoplasms with differential diagnosis to ovarian cysts.

L20 Bone system, joints and soft tissue pathology with emphasis on the oral cavity, jaws and teeth tumors

and precancerous conditions.

Learning outcomes:

Students will be able to:

1. Define and classify tumors and precancerous conditions and tumor-like lesions.
2. Connect with macroscopic and microscopic appearance.
3. Connect with clinical manifestations.
4. Classify odontogenic and neodontogenic tumors.

L 21 Skin

Learning outcomes:

Students will be able to

1. Describe benign / malignant epithelial skin lesions.
2. Describe benign / malignant pigmented lesions.
3. Describe immune disorders of the skin.
4. Correlate skin and oral cavity diseases.

L22 Inflammation and tumors of the salivary glands.

Learning outcomes:

Students will be able to

1. Define and classify inflammation, tumors and tumor-like lesions of salivary glands.

L23 Central Nervous System.

Learning outcomes:

Students will be able to

1. Describe the etiology and pathology of brain edema, types of cerebral edema.
2. Describe the morphological characteristics of cerebrovascular diseases in relation to the etiology.
3. Describe morphological changes in brain trauma.
4. Classify tumors of central and peripheral nervous system.
5. List demyelinating diseases and neurodegenerative disorders.

L24 Oral cavity: terminology ,development, inflammatory / reactive lesions, infections.

Learning outcomes:

Students will be able to

1. Define and classify oral cavity development disorders, teeth anomalies.
2. Define and classify inflammatory / reactive lesions and to connect with macroscopic and microscopic appearance.
3. Classify and define pathogenesis and morphological characteristics of odontogenic/ nonodontogenic cysts.

L25 Oral cavity: oral manifestations of systemic diseases.

Learning outcomes:

Students will be able to

1. Define pathogenesis, morphology and complications of periodontal inflammatory disease.
2. Indicate oral manifestations in systemic autoimmune diseases.
3. Indicate oral manifestations in endocrine and metabolic diseases.
4. Indicate oral manifestations in various malignant conditions.
5. Indicate oral manifestations in poisoning and hypovitaminosis.

L26 Hematopathology: anemia, disorders and neoplastic proliferation of white cells, bleeding disorders, disseminated intravascular coagulation (DIC).

Learning outcomes:

Students will learn to

1. Define and classify anemias.

2. Classify white blood cell disease.
3. Describe methods in the diagnosis of white blood cells neoplasms.
4. Bleeding disorders.

List of seminars (titles):

GENERAL PATHOLOGY

- S1** Cellular adaptation, Metabolic disorders
- S2** Irreversible cell damage
- S3** Acute inflammation, morphological forms of acute inflammation
- S4** Chronic inflammation, morphological forms of chronic inflammation
- S5** Thrombosis, embolism, infarction
- S6** Neoplasms I: clinical and pathological classification and tumor names, tumor biology
- S7** Neoplasms II: carcinogenesis, clinical signs, laboratory diagnostics
- S8** Cytogenetic tests in prenatal diagnosis, screening tests from maternal serum, diseases caused by polygenic inheritance
- S9** STUDENT SEMINAR Environmental Diseases (Smoking, Alcoholism, Physical Agents Damage)

SYSTEMIC PATHOLOGY and ORAL CAVITY PATHOLOGY

- S10** Mucosal infections
- S11** Diseases of endocard, endocardial valves, myocardial and pericardial diseases, hypertensive heart disease, pulmonary heart disease
- S12** Tumors of upper respiratory tract, pleura and mediastinum
- S13** Gastrointestinal Tract

Learning outcomes:

Students will learn to

1. List and define esophageal inflammation, esophageal tumors.
2. List and define gastric and duodenal ulcerative disease, gastric tumors.
3. Define infectious enterocolitis, ulcerative colitis, Crohn's disease.
4. Morphological characteristics of colon adenoma and colorectal carcinoma.

- S14** Male Genital System Pathology
- S15** Ovarian and oviduct Diseases, Gestational Trophoblastic Disease
- S16** Tumors of the oral cavity and premalignant lesions in a clinically pathological correlation
- S17** Salivary gland diseases, odontogenic cysts and tumors
- S18** Tumors of the central and peripheral nervous system
- S19** Terminology and morphology of pathological changes of the oral cavity
- S20** Oral manifestations in endocrine and metabolic diseases, various tumor conditions, poisoning and hypovitaminosis
- S21** Hematopathology, anemia, disorders of the basal hematopoietic cell, myelodysplastic syndrome

List of exercises with description:

Exercises will be held at the Department of Pathology. Students should study the theory before coming to practicals. It is obligatory to wear a lab coat to exercises. Practical provide further information and practice needed for the interpretation of gross and microscopic changes in various organs and their correlation with clinical, radiologic and laboratory tests. Emphasis will be placed on pathogenetic mechanisms and the importance of correlating pathologic changes with clinical cases, images and laboratory or autopsy findings

especially those located in oral cavity. Teacher is facilitator, discussing and clarifying difficult points, defining terminology, and motivating active student's involvement in practicals. The histological specimens are presented in the form of virtual microscopy teaching. Microscopic examination of the tissue includes a review of scanned standard histological specimens. The macroscopic examination of the organs and tissue is performed during the daily work in the laboratory of the Department of Pathology, on the samples exhibited in the exercise room of the Institute and during the autopsy. Latin diagnoses of pathological changes studied in macroscopic and microscopic examination are listed.

GENERAL PATHOLOGY and ORAL CAVITY PATHOLOGY

E1 Cellular Pathology : Cellular Adaptations, cellular accumulations: virtual microscopy, Macroscopic examination

ATROPHIA CYANOTICA HEPATIS

HYPERTROPHIA MYOCARDII

HYPERPLASIA GLANDULARIS PROSTATAE

METAPLASIA SQUAMOSA

METAMORPHOSIS ADIPOSA HEPATIS

ANTHRACOSIS PULMONIS

HAEMOCHROMATOSIS

E2 Irreversible cell damage: virtual microscopy, macroscopic examination

INFARCTUS MYOCARDII RECENS

ENCEPHALOMALATIA

TUBERCULOSIS CASEOSA PULMONIS

MICROCALCIFICATIONES PLACENTAE

INFARCTUS ANAEMICUS PLACENTAE

STEATONECROSIS

E3 Inflammation: Acute inflammation, morphological forms of acute inflammation: virtual microscopy, macroscopic examination

PERICARDITIS FIBRINOSA

PNEUMONIA ABCEDENS AND PLEURITIS FIBRINOSA

APPENDICITIS ACUTA SUPPURATIVA PHLEGMONOSA

E4 Chronic inflammation, morphological forms of chronic inflammation: virtual microscopy, macroscopic examination

SIALOADENITIS CHRONICA SUPPURATIVA

SARCOIDOSIS LYMPHONODI

GRANULOMA CORPORIS ALIENI

LYMPHADENITIS GRANULOMATOSA - BOLEST MAJOR OGREBA GRANULATIONES

E5 Hemodynamic disorders: virtual microscopy, macroscopic examination

CYANOSIS ET OEDEM PULMONUM

INDURATIO CYANOTICA PULMONUM

NECROSIS HAEMORRHAGICA CENTRALIS HEPATIS

THROMBOEMBOLIA ARTERIAE PULMONALIS CUM INFARCTUS HAEMORRHAGICUS PULMONIS

EMBOLIA ADIPOSA PULMONIS

INFARCTUS ANAEMICUS RENIS

E6 Neoplasia I: virtual microscopy, macroscopic examination

PAPILOMA LINGVAE

CYSTADENOMA SEROSUM OVARII

TERATOMA

ADENOMA PLEOMORPHE
CARCINOMA SCHIRROSUM
CARCINOMA ANAPLASTICUM

E7 Neoplasia II: virtual microscopy, macroscopic examination

ADENOCARCINOMA
ADENOMA TUBULARE
LEIOMYOMA
LEIOMYSARCOMA
MORBUS BOWEN
CARCINOMA PLANOCELLULARE
ADENOCARCINOMA METASTATICUM LYMPHONODI
ADENOCARCINOMA METASTATICUM HEPATIS
LYMPHANGIOSIS CARCINOMATOSA

E8 Amyloidosis

AMYLOIDOSIS RENIS
AMYLOIDOSIS HEPATIS
TOPHI URICI

E9 Diagnostic and predictive tools for Breast carcinoma

E10 Immunofluorescence in diagnosis of immuno mediated diseases

E11 Tumors of the oral cavity ,jaws and teeth, premalignant lesions in a clinically pathological correlation- virtual pathology slides

AMELOBLASTOMA
CARCINOMA PLANOCELLULARE BASEOS ORIS
DYSPLASIA FIBROSA
TUMOR GIGANTOCELLULARIS OSSIS
FIBROMA
HAEMANGIOMA CAVERNOSUM

E12 Salivary gland diseases, odontogenic cysts and tumors

CARCINOMA ADENOIDES CYSTICUM
CYSTADENOMA LYMPHOMATOSUM PAPILLARE
MUCOCOELE

E13 Diseases of the oral cavity (cysts, and tumor like lesions)

GRANULOMA GIGANTOCELLULARE
GRANULOMA PYOGENICUM
CYSTA FOLLICULARIS
CYSTA RADICULARIS
ULCUS LINGUAE

E13 Autoimmune disease of oral cavity

PEMPHIGUS VULGARIS

E14 Autopsy (discussion and repetition)

E15 The role of cytology in diagnosing the disease

E16 Laboratory Diagnostics Laboratory Methods

Practicals in systemic pathology (**P**)

Practical knowledge includes identification and description of macroscopic specimens from the Atlas, samples

exhibited in the exercise room of the Institute and are performed during the seminars.

Students' obligations:

All forms of teaching are compulsory and student attendance at lectures, seminars and exercises will be conducted accordingly. Student has not fulfilled his / her obligations prescribed by the study program if he / she did not attend more than 30% of teaching hours of all forms of teaching (lectures, seminars or exercises) according to the Rulebook on Student Assessment at the Faculty of Medicine in Rijeka, class: 003-05/18-02/07, reg 2170-24-01-18-1.

Students' performance will be evaluated during class and at the final exam. Out of a total of 100% of marks, during the class the student can achieve a maximum of 70% of marks, and at the final exam a maximum of 30% of marks.

I. Achievement during the class (maximum 70% of marks):

During the class the following are evaluated:

1. Seminar independent work is evaluated in the maximum assessment point amount of 5%, ie the minimum 2% according to the table:

Marks in seminas	points (maximum 5)
4,5 - 5,0	5
3,5 - 4,4	4
2,5 - 3,4	3
2,0 - 2,4	2

2. Students' knowledge will be monitored and graded during the course, as well as upon completion of certain units in the form of two written checks (tests: part I and part II). Acquired knowledge with two written examinations (maximum 70% of marks):
part I - General pathology test (50 questions) and part II – Systemic pathology test (50 questions).
Tests in general pathology, part I, can achieve a maximum of overall 32% of assessment points, and test in systemic pathology, part II, a maximum of 33% of assessment points, ie a maximum total of 65% of assessment points, as follows in the tables:

Part I		Part II		
Correct Answers	Points	Correct Answers	Points	Points
49 – 50	32	49 – 50	33	
47 – 48	31	47 – 48	32	33
45 – 46	30	45 – 46	31	32
43 – 44	29	43 – 44	30	31
41 – 42	28	41 – 42	29	30
39 – 40	27	39 – 40	28	29
37 – 38	26	37 – 38	27	28
35 – 36	25	35 – 36	26	27
33 – 34	24	33 – 34	25	26
31 – 32	23	31 – 32	24	25
29 – 30	22	29 – 30	23	24
27 – 28	21	27 – 28	22	23
25 – 26	20	25 – 26	21	22
24	19	24	20	21
23	18	23	19	20
22	17	22	18	19
21	16.5	21	17.5	18
				17.5

In addition to regular proficiency tests, remedial tests will be organized for each test (part I and part II) for those students who have failed to earn points (insufficient academic achievement or failure to attend the exam for justified reasons) and students who want to improve the number of points gained by passing regular partial courses, in which case the number of points earned on the remedial will be counted as the final result.

II. Final exam in Pathology (maximum 30% of marks):

Only students who have fulfilled the following requirements can take the final exam:

1. have duly completed the course
2. have achieved a **minimum of 35% mark**, ie 50% or more mark, out of the maximum 70% mark that could be obtained during the course through continuous monitoring and evaluation of students.

Students who have earned a total of 0 to 49.9% of grades during the course of all forms of knowledge assessment, which could be obtained during the course through continuous monitoring and evaluation of students, are graded F (unsuccessful), cannot earn ECTS credits and must re-enroll in the course.

The final exam is conducted in oral form and includes the examination of theoretical knowledge in general and systemic pathology and the recognition of micro and macro preparations.

Each of the three parts of the final exam (theory, macro, micro) can achieve a minimum of 5 to a maximum of 10 points.

Exam score	Points
4,6 – 5,0	10
4,1 – 4,5	9
3,6 – 4,0	8
3,1 – 3,5	7
2,5 – 3,0	6
2,0 – 2,4	5

The final grade from the course is determined on the basis of the final success according to the table:

Total points	Final grade
90 - 100% (A)	Excellent (5)
75 - 89,9 % (B)	Very good (4)
60 - 74,9% (C)	Good (3)
50 - 59,9% (D)	Sufficient (2)

COURSE SCHEDULE (for academic year 2023/2024)

Legend: L- lectures, S- seminars and E- exercises

LR- Lecture room

ER- exercise room

LIB-Library of Department of Pathology, Medical faculty Rijeka:

Date	Lecture (hour) location	Seminars and practical exercise Practicals include macroscopic specimens from the Atlas, samples exhibited in the exercise room of the Institute and VIRTUAL PATHOLOGY	Teacher / associate
GENERAL PATHOLOGY	Part I		
08.04.2024.	L1,2 (8,15-10,00) LIB Cellular Pathology: An Introduction to Pathology, An Overview of Cellular Pathology Cell damage: Reversible and irreversible	S1 S2 (11,15-13,00) – LR / ER S1 Cellular adaptations, Metabolic accumulations S2 Reversible and irreversible cell injury E1,2 (13,15-15,00) – ER Cellular Pathology + short exam according to learning outcomes	Prof. dr.sc.Dora Fućkar Čupić Prof. dr.sc.Manuela Avirović
09.04.2024.	L3 (8,15-10,00) - LIB Acute inflammation: Introduction, inflammation division, inflammatory cells, chemical inflammation mediators Inflammation	S3 (11,15-13,00) – LR / ER Acute inflammation, morphological forms of acute inflammation E3 (13,15-15,00) – ER Acute inflammation + short exam according to learning outcomes	Asst.Prof.dr.sc. Irena Seili Bekafigo Prof. dr.sc. Manuela Avirović
10.04.2024.	L4 (8,15-10,00) LIB Chronic inflammation: Outcome of inflammation, repair, clinical signs of inflammation (local and systemic)	S4 (11,15-13,00) – LR / ER Chronic inflammation, morphological forms of chronic inflammation E4 (13,15-15,00) – ER Chronic inflammation + short exam according to learning outcomes	Prof. dr.sc. Emina Babarović Prof. dr.sc. Manuela Avirović
11.-12-04.2024.	A day for study and repetition, no classes		

15.04.2024.	L5 (8,15-10,00) LIB Hemodynamic disorders: edema, dehydration, hyperemia and congestion, bleeding, shock	S5 (11,15-13,00) – LR / ER Thrombosis, embolism, infarction E5 (13,15-15,00) – ER Thrombosis, embolism, infarction + short exam according to learning outcomes	Asst. Anita Savić Vuković, dr.med. Asst. Leo Kovač, dr.med.
16.04.2024.	L6 (8,15-10,00) LIB Neoplasm 1 - neoplasms and histogenic classification of neoplasms; the principles of nomenclature and classification of neoplasms; benign and malignant neoplasms, growth patterns and types of tumor metastasis	S6 (11,15-13,00) – LR / ER Neoplasms: clinical and pathological classification and tumor nomenclature, tumor biology E6 (13,15-15,00) – ER Neoplasia I + short exam according to learning outcomes	Prof. dr.sc. Manuela Avirović Asst. Anita Savić Vuković, dr.med.
17.04.2024.	L7 (8,15-10,00) LIB Neoplasm 2 Molecular Biology in Diagnosis of Diseases: Methodology, Application in Neoplasm Diagnosis	S7 (11,15-13,00) – LR / ER Neoplasms: carcinogenesis, clinical signs, laboratory diagnostics E7 (13,15-15,00) – ER Neoplasia II + short exam according to learning outcomes	Prof. dr.sc. Emina Babarović Prof. dr.sc. Manuela Avirović
18.04.2024.	L8 (8,15-10,00) LIB Autoimmune diseases	 E8 (11,15-13,00) – ER Amyloidosis + short exam according to learning outcomes	Asst.Prof.dr.sc.Roberta Rubeša Asst. Leo Kovač, dr.med.
19.04.2024.	L9 (8,15-10,00) LR / ER Developmental and genetic diseases	 S9 (11,15-13,00) – LIB Cytogenetic tests in prenatal diagnosis, screening tests from maternal serum, diseases caused by polygenic inheritance	Prof. dr. sc. Senija Eminović Prof. dr.sc. Manuela Avirović
22.04.2024.		S8 STUDENT SEMINAR (13,15-15,00) – LR / ER Environmental Diseases (Smoking, Alcoholism, Physical Agents Damage)	Asst. Leo Kovač, dr.med.

23.04.2024.	L10 (8,15-10,00) LIB General pathology of infectious diseases LIB	S10 (11,15-13,00) – LR / ER Mucosal infections	Prof. dr.sc. Manuela Avirović
24.04.2024.	TEST GENERAL PATHOLOGY 24.04.2023. (11,15-12,15) - LR	PRACTICAL EXAM : VIRTUAL PATHOLOGY AND ATLAS 14,00-16,00	
Part II			
SYSTEMIC PATHOLOGY		P-Practicals include MACROSCOPIC SPECIMENS from the Atlas, samples exhibited in the exercise room of the Institute and are performed during the seminars	
25.04.2024.	L11 (08:15 – 10:00) LIB Ischemic heart disease, Rheumatic heart disease, summary of heart failure L12 (13:15 – 15:00) LR / ER Blood vessel diseases	S11 (11,15 -13,00) – LR / ER Diseases of endocard, myocardial and pericardial inflammation, hypertensive heart disease, pulmonary heart disease	Prof. dr.sc. Senija Eminović Prof. dr.sc. Koviljka Matušan-Ilijaš
26.04.2024.	L13 (8,15-10,00) LIB Head and neck pathology and Respiratory system Inflammation, obstructive and restrictive and vascular diseases	S12 (11,15-13,00) – LR / ER Tumors of upper respiratory tract, pleura and mediastinum	Prof. dr.sc. Ksenija Jurinović Asst.Prof.dr.sc.Roberta Rubeša
29.04.2024.	L14 (8,15-11,00) LIB Endocrine System		Prof. dr.sc. Manuela Avirović
30.04.2024.	L15 (13,15-15,00) LR / ER Lung tumors		Asst. Prof.dr.sc.Christophe Štemberger
02.05.2024.	L16 (8,15-10,00) LIB Breast diseases	E9 (11,15-12,00) – LR / ER Diagnostic and predictive tools for Breast carcinoma	Prof. dr.sc. Manuela Avirović
03.05.2024.	L17 (8,15-10,00) LIB Liver, circulatory disorders, viral hepatitis and toxic damage and cirrhosis of the liver, liver		Prof.dr.sc. Dora Fučkar Čupić

	tumors Biliary system, pancreas, inflammation and tumors	S13 (11,15-14,00) – LR / ER Pathology of gastrointestinal system	Prof. dr.sc. Dražen Kovač
06.05.2024.	L18 (8,15-10,00) LIB Kidney: glomerular, tubular and interstitial diseases, kidney tumors –	E10 (11,15-13,00) – ER Immunofluorescence in diagnosis of immuno mediated diseases EM S14 (13,15-15,00) – LR / ER Male Genital System	Asst.Prof.dr.sc.Christophe Štemberger Prof. dr.sc. Emina Babarović
07.05.2024.	L19 (8,15-10,00) LIB Female Genital System	S15 (11,15-13,00) – LR / ER Ovarian and oviduct Diseases, Gestational Trophoblastic Disease	Prof. dr.sc. Senija Eminović
08.05.2024.	L20 (8,15-10,00) LIB Bone system, joints and soft tissue pathology with emphasis on the oral cavity, jaws and teeth tumors and precancerous conditions	S16 (11:15 – 13:00) – LR / ER Tumors of the oral cavity and premalignant lesions in a clinicall-pathological correlation E11 (13,15 – 15,00) – ER Tumors of the oral cavity, jaws and teeth, premalignant lesions - virtual pathology slides + short exam according to learning outcomes	Prof. dr.sc.Koviljka Matušan Ilijaš Asst.Prof.dr.sc.Roberta Rubeša Prof. dr.sc. Manuela Avirović
09.05.2024.	L21 (8,15-10,00) LIB Skin L22 (11,15-13,00) LIB Inflammation and tumors of the salivary glands	S17/E12 (13,15-15,00) – LR / ER Salivary gland diseases, odontogenic cysts and tumors – virtual pathology slides	Prof. dr.sc. Koviljka Matušan Ilijaš Prof. dr.sc. Ksenija Jurinović
10.05.2024.	L23 (08,15-10,00) LR / ER Central Nervous System	S18 (11,15-13,00) – LR / ER Tumors of the central and peripheral nervous system	Prof. dr.sc. Senija Eminović
13.05.2024.	L24 (8,15-10,00) LIB Oral cavity: developmental, inflammatory / reactive lesions, infections	S19 (11,15 – 13,00) – LR / ER Terminology and morphology of pathological changes of the oral cavity	Prof. dr.sc. Manuela Avirović

14.05.2024.	L25 (8,15-10,00) LIB Oral cavity: oral manifestations of systemic diseases especially autoimmune	S20 (11,15-13,00) – LR / ER Oral manifestations in endocrine and metabolic diseases, various tumor conditions, poisoning and hypovitaminosis E13 (13,15 – 15,00) – ER Diseases of oral cavity including autoimmune diseases (virtual pathology slides) + short exam according to learning outcomes	Prof. dr.sc. Ksenija Jurinović Prof.dr.sc. Manuela Avirović
15.05.2024.	L26 (08,15 -10) LIB Hematopathology: anemia, leukemia / lymphoma	S21 (11,15-13,00) – LR / ER Hematopathology, anemia, disorders of the basal hematopoietic cell, myelodysplastic syndrome / oral mucosa	Prof. dr.sc. Ita Hadžisejdić
16.05.2024.		E14 (10:00-13:00) Autopsy room and ER or LIB Autopsy, discussion of cases , on call	Prof. dr.sc. Manuela Avirović
17.05.2024.		E15 (13,15-16,00) – LR / ER The role of cytology in diagnosing the disease	Asst. Prof. dr.sc. Irena Seili Bekafigo / Prof. dr.sc. Danijela Vrdoljak Mozetič
20.05.2024.		E16 (08-10:00) ER or LIB Laboratory Diagnostics Laboratory Methods	Prof. dr.sc. Ita Hadžisejdić
21.05.2024.		E14 (10:00-13:00) Autopsy room and ER or LIB Autopsy, discussion of cases , on call	Asst. Leo Kovač, dr.med.
22.05.2024.	Consultations (12-14h)		Prof. dr.sc. Manuela Avirović
23.05.2024.	A day for study and repetition, no classes		
24.05.2024.	TEST SYSTEMIC AND ORAL PATHOLOGY (11,15-12,15) - LR		
27.05.2024.	FINAL EXAM - includes ORAL EXAM (general and systemic pathology)	and PRACTICAL EXAM : VIRTUAL PATHOLOGY SLIDES (oral cavity) and ATLAS (systemic pathology)	
Final exam dates	27.05.2024. 05.06.2024. 19.06.2024. 04.07.2024. 05.09.2024. 9.09.2024.		
remedial exams dates	05.06.2024. remedial exam in general pathology 19.06.2024. remedial test in systemic pathology and oral cavity pathology 04.07.2024.	Legend: LR- Lecture room ER- exercise room LIB-Library of Department of Pathology, Medical faculty Rijeka	

remedial exam in general pathology 05.09.2024. remedial test in systemic pathology and oral cavity pathology		
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Other important information regarding to the course:

The course contents and all course related information are available on the student web portals, Departments of General Pathology and Pathological Anatomy and Merlin 2023/2024 (srce.hr) .
