

Internal Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine Field of study Medical Program Study level long-cycle master's degree program Study form full-time Education profile general academic Disciplines Medical science Subject related to scientific research Yes		Didactic cycle 2016/17 Realization year 2018/19, 2019/20, 2020/21, 2021/22 Lecture languages English Block obligatory for passing in the course of studies Mandatory obligatory Examination examination Standard groups B. Scientific basics of medicine, C. Preclinical course, E. Clinical non-procedural medical disciplines
Subject coordinator	Wiktoria Wojciechowska, Piotr Hydzik, Agnieszka Olszanecka, Jakub Podolec, Krzysztof Żmudka, Maciej Małecki, Beata Kwaśny-Krochin, Stanisława Bazan-Socha, Aleksandra Gilis-Januszewska, Małgorzata Zwolińska-Wcisło, Małgorzata Waluś-Miarka, Marek Przybylski, Grzegorz Porębski, Marcin Sobociński	
Lecturer	Wiktoria Wojciechowska, Piotr Hydzik, Agnieszka Olszanecka, Jakub Podolec, Krzysztof Żmudka, Maciej Małecki, Alicja Hubalewska-Dydejczyk, Krzysztof Sładek, Grażyna Bochenek, Wojciech Płazak, Mariusz Korkosz, Katarzyna Stolarz-Skrzypek, Anna Przybyła, Przemysław Miarka, Ewa Wieczorek-Surdacka, Krzysztof Ciszowski, Paulina Fatyga, Barbara Idzior-Waluś, Beata Kieć-Wilk, Artur Bień, Barbara Kutra, Przemysław Witek, Jerzy Hohendorff, Beata Kwaśny-Krochin, Zofia Guła, Wojciech Sydor, Joanna Kosałka, Leszek Bryniarski, Stanisław Bartuś, Bartłomiej Guzik, Piotr Podolec, Andrzej Gackowski, Grzegorz Kopeć, Stanisława Bazan-Socha, Aleksandra Gilis-Januszewska, Małgorzata Zwolińska-Wcisło, Małgorzata Waluś-Miarka, Marek Przybylski, Grzegorz Porębski, Marcin Sobociński	
Periods Semester 5, Semester 6	Examination credit Activities and hours classes: 78, seminar: 52	Number of ECTS points 8.0

Periods Semester 7, Semester 8	Examination credit Activities and hours lecture: 2, seminar: 46, classes: 61	Number of ECTS points 6.0
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Periods Semester 9, Semester 10	Examination credit Activities and hours seminar: 40, classes: 77	Number of ECTS points 5.0
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Periods Semester 11, Semester 12	Examination examination Activities and hours clinical classes: 240	Number of ECTS points 17.0
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Goals

C1	The primary goal of the Internal Medicine Course is the development of an understanding of the clinical presentation, basic physiology, physical findings, evaluation and management of adult patient diseases. The emphasis of the course is directed toward the integration of basic science with clinical skills.
C2	Practical preparation for practicing the medical doctor profession
C3	Developing communications skills with patients and cooperation ability with members of the interdisciplinary team.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge - Student knows and understands:			
W1	development, structure and functions of the human body in normal and pathological conditions	O.W1	oral examination, classroom observation, oral answer, test, multiple choice test
W2	symptoms and course of diseases	O.W2	oral examination, classroom observation, oral answer, self-assessment, test, multiple choice test
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral examination, classroom observation, test
W4	ethical, social and legal conditions for practicing the medical profession and the principles of health promotion, based on scientific evidence and accepted standards	O.W4	oral examination, classroom observation, test
W5	methods of conducting scientific research	O.W5	oral examination, classroom observation, test

W6	principles for the development of databases for patient care and research	B.W48	oral examination, classroom observation, test
W7	principles for the operation and use of electronic patient records	B.W49	classroom observation
W8	principles of proper nutrition of a healthy and sick person and methods of assessing the state of nutrition	B.W50	oral examination, classroom observation, test
W9	elements of the hospital patient service system	B.W42	classroom observation
W10	selected online sources of medical information, with particular emphasis on genetic diseases, available on the Internet	B.W43	classroom observation
W11	the types of observational and interventional studies and the rules governing their conduct	B.W35	oral examination, classroom observation, test
W12	the principles for assessing the power and credibility of the recommendations in the guidelines for action	B.W34	oral examination, classroom observation, test
W13	basic principles of disinfection, sterilization and aseptic management	C.W20	oral examination, classroom observation, test
W14	basic of development and mechanisms of immune system action, including specific and non-specific mechanisms of humoral and cellular immunity	C.W21	oral examination, classroom observation, test
W15	types of hypersensitivity reactions, types of immunodeficiency and basics of immunomodulation	C.W23	oral examination, classroom observation, test
W16	definition and pathophysiology of shock, with particular emphasis on differentiation of the causes of shock and multi-organ failure	C.W29	oral examination, classroom observation, test
W17	aetiology of haemodynamic disorders, regressive and progressive changes	C.W30	oral examination, classroom observation, test
W18	individual groups of therapeutic agents	C.W35	oral examination, classroom observation, test
W19	the main mechanisms of drug action, and their changes in the system depending on age	C.W36	oral examination, classroom observation, test
W20	the influence of disease processes on the metabolism and elimination of medicines	C.W37	oral examination, classroom observation, test
W21	basic rules of pharmacotherapy	C.W38	oral examination, classroom observation, oral answer, test
W22	more important side effects of medicines, including those resulting from their interaction	C.W39	oral examination, classroom observation, test
W23	the problem of drug resistance, including multi-drug drug resistance	C.W40	oral examination, classroom observation, test

W24	basic concepts of general toxicology	C.W43	oral examination, classroom observation, test
W25	environmental and epidemiological determinants of the most frequent diseases	E.W1	oral examination, classroom observation, test
W26	the causes, symptoms, principles of diagnosis and therapeutic management of the most common internal diseases and their complications in adults: 1) cardiovascular diseases, including ischemic heart disease, heart defects, endocarditis, myocardial infarction, pericardial infarction, heart failure (acute and chronic), diseases of arteries and venous vessels, arterial hypertension - primary and secondary, pulmonary hypertension, 2) respiratory system diseases, including respiratory tract diseases, chronic obstructive pulmonary disease, bronchial asthma, bronchial dilatation, cystic fibrosis, respiratory infections, interstitial diseases of the lungs, pleura, mediastinum, obstructive and central sleep apnea, respiratory failure (acute and chronic), respiratory tumors, 3) diseases of the digestive system, including diseases of the mouth, esophagus, stomach and duodenum, intestines, pancreas, liver, bile ducts and gallbladder, 4) diseases of the internal secretion system, including diseases of the hypothalamus and pituitary gland, thyroidism, parathyroidism, adrenal cortex and medulla, ovaries and testicles, and neuroendocrine tumors, polyglandular syndromes, various types of diabetes and metabolic syndrome – hypoglycaemia, obesity, dyslipidemia, 5) diseases of the kidneys and the urinary tract, including acute and chronic renal failure, glomerulonephritis and interstitial kidney diseases, kidney cysts, kidney stones, urinary tract infections, urinary tract neoplasms, in particular of bladder and kidney neoplasms, 6) hematopoietic diseases, including bone marrow aplasia, anemia, granulocytopenia and agranulocytosis, thrombocytopenia, acute leukemia, myeloproliferative and myelodysplastic-myeloproliferative tumours, myelodysplastic syndromes, mature B and T lymphocytes tumors, bleeding diatheses, thrombophilia, life-threatening conditions in hematology, blood disorders in other organ diseases, 7) rheumatic diseases, including systemic connective tissue diseases, systemic vasculitis, joint inflammations involving spinal cord, metabolic bone diseases, osteoporosis and osteoarthritis in particular, gout, 8) allergic diseases, including anaphylaxis and anaphylactic shock and angioedema, 9) water-electrolyte and acid-base disorders: dehydration conditions, overhydration conditions, electrolyte, acidic and alkaline disorders	E.W7	oral examination, classroom observation, test, multiple choice test, credit
W27	the indications and rules for performing liver biopsy and assists in performing procedure	E.W55	oral examination, classroom observation, test
W28	processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body	B.W18	oral examination, classroom observation, test

W29	activity and mechanisms of regulation of all organs and systems of the human body, including the cardiovascular system, respiratory system, digestive system, urinary tract and skin layers, and the interrelations existing between them	B.W21	oral examination, classroom observation, test
W30	basic quantitative parameters describing the capacity of particular systems and organs, including the range of norms and demographic factors influencing the value of these parameters	B.W24	oral examination, classroom observation, test
W31	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.W25	oral examination, classroom observation, test
W32	the mechanism of hormone actions	C.W51	oral examination, classroom observation, test
W33	the consequences of inadequate nutrition, including prolonged hunger, excessive food intake and unbalanced diet, and disorders of digestion and absorption of digestive products	C.W50	oral examination, classroom observation, test
W34	the consequences of human body exposure to various chemical and biological agents and the principles of prevention	C.W15	oral examination, classroom observation, test
W35	groups of medicines, the abuse of which can lead to poisoning	C.W44	oral examination, classroom observation, test
W36	symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected groups of drugs	C.W45	oral examination, classroom observation, test
W37	basic principles of diagnostic procedures in poisoning	C.W46	oral examination, classroom observation, test
W38	computer-aided decision support for medical decisions with particular emphasis on clinical pathway techniques	B.W39	classroom observation
W39	morphological changes in the most important non-cancer diseases affecting the entire organism (e.g. atherosclerosis, hypertension, diabetes, cardiopulmonary insufficiency, systemic infectious and immunological diseases, the most frequent hormonal disorders, the most frequent genetic diseases), and is able to link them with already acquired knowledge of anatomy, biochemistry and pathological physiology in order to deduce clinical symptoms	C.W52	oral examination, classroom observation, test
W40	basic neurological symptom syndromes	E.W13	oral examination
W41	pathomechanisms of regulation disorders of all organs and systems of the human body, including: circulatory, respiratory, urinary and digestive systems, nervous system (central, peripheral and autonomous)	B.W33	oral examination, classroom observation
W42	the concept of impairment and disability	E.W30	oral examination, classroom observation
W43	specific diseases related to physical activity and competitive sports, also in the sports of the disabled and in girls and women	E.W46	classroom observation

W44	principles of nutrition of physically active persons and athletes. Describes the difference between doping and support	E.W47	classroom observation
W45	the role of medical rehabilitation and methods used in it	E.W31	oral examination, classroom observation, test
W46	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management	C.W19	classroom observation, multiple choice test
Skills - Student can:			
U1	identify medical problems and prioritize medical management	O.U1	oral examination, classroom observation, self-assessment, test
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	oral examination, classroom observation, test
U3	plan the diagnostic procedure and interpret its results	O.U3	oral examination, classroom observation, test
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	oral examination, classroom observation, test
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation
U6	inspire the learning process of others	O.U6	classroom observation
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U8	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
U10	use databases, including online databases, and search for the necessary information using the available tools	B.U10	classroom observation
U11	assess the reliability of the clinical trial	B.U18	oral examination, classroom observation, test
U12	understand the concepts describing the strength of the intervention in the study	B.U19	oral examination, classroom observation, test
U13	use computer simulators to support the medical decision-making process	B.U27	classroom observation
U14	protect clinical data against unauthorized access	B.U29	classroom observation
U15	assess toxicological hazards in specific age groups and in conditions of hepatic and renal failure, and prevent drug poisoning	C.U18	oral examination, classroom observation, test
U16	interpret the results of microbiological tests	C.U10	oral examination, classroom observation, test

U17	carry out a medical history with an adult patient	E.U1	oral examination, classroom observation, test, multiple choice test, credit
U18	conduct a full and targeted physical examination of an adult patient	E.U3	oral examination, classroom observation, test, multiple choice test, credit
U19	assess the general condition, state of consciousness and awareness of the patient	E.U7	oral examination, classroom observation, test
U20	perform differential diagnosis of the most common diseases of adults and children	E.U12	oral examination, classroom observation, test, multiple choice test
U21	evaluate and describe the somatic and mental state of the patient	E.U13	oral examination, classroom observation, test
U22	recognize immediate life-threatening conditions	E.U14	oral examination, classroom observation, test
U23	recognize the condition after drinking alcohol, after using drugs and other substances	E.U15	oral examination, classroom observation, test
U24	plan diagnostic, therapeutic and prophylactic procedures	E.U16	oral examination, classroom observation, test
U25	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	oral examination, classroom observation, test
U26	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	oral examination, classroom observation, test
U27	recognize the symptoms of drug dependence and propose treatment	E.U19	oral examination, classroom observation, test
U28	qualify the patient for home and hospital treatment	E.U20	oral examination, classroom observation, test
U29	recognize states in which the duration of life, functional state or patient preferences limit the conduct in accordance with the guidelines specified for a given disease	E.U21	oral examination, classroom observation, test
U30	make a functional assessment of a patient with a disability	E.U22	oral examination, classroom observation, test
U31	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	oral examination, classroom observation, test, multiple choice test
U32	apply nutritional treatment, including enteral and parenteral nutrition	E.U25	oral examination, classroom observation, test

U33	plan the management of exposure to blood-borne infections	E.U26	oral examination, classroom observation, test
U34	qualify the patient for vaccination	E.U27	oral examination, classroom observation, test
U35	collect and retain test material for use in laboratory diagnostics	E.U28	classroom observation
U36	perform basic procedures and medical procedures including: 1) body temperature measurement, heart rate measurement, non-invasive blood pressure measurement, 2) monitoring of vital signs by means of a patient monitor, pulse oximetry, 3) spirometric examination, oxygen therapy, assisted ventilation and replacement ventilation, 4) introduction of the oropharyngeal tube, 5) intravenous, intramuscular and subcutaneous injections, cannulation of peripheral veins, collection of peripheral venous blood, collection of blood for culture, collection of arterialized capillary blood, collection of arterialized capillary blood, 6) taking nasal, throat and skin swabs, puncturing of the pleural cavity, 7) bladder catheterization in women and men, gastric tube, gastric lavage, gastric lavage, enema, 8) standard resting electrocardiogram with interpretation, electrical cardioversion and cardiac defibrillation, 9) simple strip tests and blood glucose measurements	E.U29	classroom observation
U37	assist in the performance of the following procedures and medical procedures: 1) transfusion of blood and blood-derived products, 2) drainage of the pleural cavity, 3) puncture of the pericardial sac, 4) puncture of the peritoneal cavity, 5) lumbar puncture, 6) fine-needle biopsy, 7) epidermal tests, 8) intradermal and scarification tests and interpret their results	E.U30	classroom observation
U38	plan specialist consultations	E.U32	oral examination, classroom observation, self-assessment, test
U39	implement basic treatment for acute poisoning	E.U33	oral examination, classroom observation, test
U40	assess pressure ulcers and use appropriate dressings	E.U35	classroom observation
U41	proceed in case of injuries (dress or immobilize, dress and suture the wound)	E.U36	classroom observation
U42	maintain patient's medical records	E.U38	classroom observation
U43	assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy	E.U39	classroom observation
U44	offer appropriate nutritional management to people in developmental age and adults with intensive exercise Interprets measures prohibited in sport. Identifies types and support measures	E.U43	oral examination, classroom observation, test
U45	conduct an approximate hearing and field of vision examination, and an otoscopic examination	E.U6	classroom observation

U46	propose a rehabilitation program for the most common diseases	E.U23	oral examination, classroom observation, test
U47	perform and interpret anthropometric measurements of nutritional status, is able to gather nutritional history and make a quantitative and qualitative assessment of intake (taking into account dietary supplements) using a nutritional computer program	B.U17	oral examination, classroom observation, test
U48	perform a pathophysiological analysis of selected clinical cases according to the PBCA (Problem Based Case Analysis) rule	B.U16	oral examination, classroom observation, test
U49	interpret the results of toxicological tests	C.U19	oral examination, classroom observation, test
U50	monitor the condition of a patient poisoned with chemicals or drugs E.U35. assess bedsores and apply appropriate dressings	E.U34	oral examination, classroom observation, test
U51	recognize the agony of the patient and determine his death	E.U37	classroom observation
U52	recognise the state of overtraining and overloading of internal organs and motor organs associated with practicing sport. Is able to prevent and manage dehydration and physical exercise disorders in various conditional environments	E.U42	classroom observation
U53	describe the changes in function of the organism in homeostasis disorder, determine its integrated reaction to physical effort, high and low temperature, blood or water loss, sudden verticalization, transition from sleep to wakefulness	C.U20	classroom observation

Social competences - Student is ready to:

K1	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures	O.K1	classroom observation
K2	to be guided by the well-being of a patient	O.K2	classroom observation
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation
K4	take actions towards the patient on the basis of ethical norms and principles, with an awareness of the social determinants and limitations of the disease	O.K4	classroom observation
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K6	promote health-promoting behaviors	O.K6	classroom observation, self-assessment
K7	use objective sources of information	O.K7	classroom observation
K8	formulate conclusions from own measurements or observations	O.K8	classroom observation
K9	implement the principles of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, also in a multicultural and multinational environment	O.K9	classroom observation
K10	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation

K11	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	classroom observation
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Calculation of ECTS points

Semester 5, Semester 6

Activity form	Activity hours*
classes	78
seminar	52
case analysis	30
professional practice	30
preparation for classes	20
Student workload	Hours 210
Workload involving teacher	Hours 130
Practical workload	Hours 138

* hour means 45 minutes

Semester 7, Semester 8

Activity form	Activity hours*
lecture	2
seminar	46
classes	61
preparation for classes	30
preparation for test	15
Student workload	Hours 154
Workload involving teacher	Hours 109
Practical workload	Hours 61

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*
seminar	40
classes	77
preparation for examination	15
preparation for classes	15
case analysis	10
Student workload	Hours 157
Workload involving teacher	Hours 117
Practical workload	Hours 87

* hour means 45 minutes

Semester 11, Semester 12

Activity form	Activity hours*
clinical classes	240
preparation for classes	30
case analysis	20
professional practice	30
Student workload	Hours 320
Workload involving teacher	Hours 240
Practical workload	Hours 290

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
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1.	<p>Introduction to Internal Medicine</p> <p>Semester 5</p> <p>Introduction to Internal Medicine Course covers topics concerning the medical history taking, physical examination, and interpretation of ECG, laboratory and radiological tests. The course puts special emphasis on practical exercises. The Course consists of 10 hours of seminars and 50 hours of bed-side teaching, which include: history taking, patient's examination, diagnostic test planing, and discussion of differential diagnosis.</p> <p>Bed-side teaching:</p> <p>Hematology (10 h)</p> <ol style="list-style-type: none"> 1 General patient condition, history taking scheme 2 Peripheral vascular system, techniques of examinations (arteries, varicose veins, jugular vein distension), peripheral oedema differentiation) 3 Examination of: Lymph nodes, breast and axilla, spleen examination 4 Musculoskeletal /neurological examination <p>Endocrinology (10 h)</p> <ol style="list-style-type: none"> 1 Hyper/hypothyroidism, secondary hypertension, diabetes ; 2 Vital signs, skin (stretch marks, hirsutism, ect.); 3 Polyuria, polydipsia, anuria, dysuria, haematuria, renal failure, nephritic syndrome; 4 Head and neck examination (cranial nerves) ; <p>Cardiology (10 h)</p> <ol style="list-style-type: none"> 1 Chest pain, hypertension (primary); 2 Heart examination (HR, pulse rate, heart sounds, heart murmurs); 3 Cyanosis/ dyspnoea, heart failure; palpitation, syncope; 4 ECG introduction; <p>Gastroenterology (10 h)</p> <ol style="list-style-type: none"> 1 Upper GI bleeding; GERD; peptic ulcer; 2 Abdomen examination (general approach), hernias, peritoneal inflammation; 3 Lower GI bleeding; constipation, diarrhoea; 4 Liver, hepatitis, jaundice, pancreas; liver examination; <p>Pulmonology (10 h)</p> <ol style="list-style-type: none"> 1 Asthma, COPD; 2 Sputum, Diagnosis of haemoptysis, Cough, Pneumonia, Pulmonary embolism; 3 Respiratory examinations: thorax, spirometry introduction; 4 Thorax examination, breast assessment; 	<p>W1, W2, W25, W26, W29, W3, W38, W4, W40, W41, W5, W8, W9, U1, U10, U11, U17, U18, U19, U2, U20, U21, U22, U23, U24, U25, U29, U3, U31, U32, U33, U36, U37, U38, U4, U42, U45, U47, U48, U5, U52, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9</p>	<p>classes, seminar, clinical classes</p>
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2.	<p>CARDIOLOGY (total: 65 hours)</p> <p>Semester 6 (25 hours)</p> <p>ECG: a systematic approach</p> <p>Introduction to heart failure</p> <p>ECHO in cardiology</p> <p>Acute coronary syndromes. Assess coronary risk following myocardial infarction</p> <p>Semester 7 (20 hours)</p> <p>Bradycardia</p> <p>Pacing therapy</p> <p>Narrow / wide QRS tachycardia</p> <p>Ablations</p> <p>Stable angina (recently diagnosed)</p> <p>Pulmonary hypertension</p> <p>Diagnosis and treatment of chronic heart failure</p> <p>Diagnose and manage endocarditis</p> <p>Congenital heart disease in adults.</p> <p>Valve disease in adult</p> <p>Semester 8 (20 hours)</p> <p>Introduction to invasive cardiology. The role for thrombolysis and catheterization /angioplasty in ACS and elective procedures.</p> <p>Differential diagnosis of chest pain and dyspnea – focus on stable angina. Diagnostic workup and treatment of NSTEMI, UA, pulmonary embolism, aortic aneurysm.</p> <p>Angiology:</p> <p>Acute aortic syndromes</p> <p>Peripheral arterial diseases: diagnosis and treatment.</p> <p>Venous thromboembolism: prevention, diagnosis and treatment.</p>	<p>W1, W10, W11, W12, W13, W14, W15, W16, W17, W18, W19, W2, W20, W21, W22, W23, W24, W25, W26, W28, W29, W3, W30, W31, W32, W33, W34, W35, W36, W37, W4, W46, W5, W8, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U3, U30, U31, U32, U33, U34, U36, U38, U39, U4, U46, U5, U50, U53, U6, U7, U8, U9, K1, K11, K2, K3, K4, K5, K6, K7, K8, K9</p>	<p>classes, seminar, clinical classes</p>
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3.	PULMONOLOGY (total: 45 hours) Semester 7/8 (Seminar 6 h) Pulmonary function tests Endoscopy of respiratory tract Chronic obstructive pulmonary disease Interstitial lung diseases. Lung neoplasms Pleural disorders Pulmonary embolism Infections of respiratory system. Tuberculosis.	W1, W2, W26, W3, W4, U1, U17, U18, U19, U2, U20, U21, U22, U24, U28, U29, U3, U31, U36, U37, U4, U42, U7, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, clinical classes
4.	GASTROENTEROLOGY (total: 45 hours) Semester 6, 7/8 Dysphagia and Odynophagia Nausea and Vomiting Diarrhea Reflux esophagitis, Peptic ulcer disease Gastrointestinal Causes of Anemia and Occult Bleeding Inflammatory bowel disease Functional disorders of GI tract Chronic liver diseases; Jaundice; Cholelithiasis, Choledocholithiasis, and Cholecystitis Pancreatitis	W2, W26, W3, W9, U1, U17, U18, U19, U20, U21, U22, U24, U25, U26, U27, U28, U29, U3, U30, U31, U32, U35, U36, U38, U4, U42, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, clinical classes

5.	<p>ENDOCRINOLOGY AND METABOLIC DISEASES</p> <p>(total: 30 hours)</p> <p>Semester 6 (15 hours)</p> <p>Classification and clinical features of diabetes.</p> <p>Chronic complications of diabetes.</p> <p>Acute complications of diabetes.</p> <p>Diabetic ketoacidosis.</p> <p>Insulinotherapy</p> <p>Familial hypercholesterolemia: diagnosis and treatment</p> <p>Semester 7/8 (15 hours)</p> <p>Anterior pituitary: signs and symptoms of Cushing disease, acromegaly and prolactinoma.</p> <p>Disorders of the thyroid gland: Hypothyroidism, Hyperthyroidism and thyrotoxicosis, Thyroiditis, Thyroid nodules and thyroid cancer;</p> <p>Disorders of the parathyroid function, Metabolic bone disease: Osteoporosis treatment and prophylaxis</p> <p>The adrenal cortex: Primary adrenocortical insufficiency (Addison's disease) Disorders of adrenal medullary function – pheochromocytoma</p>	<p>W1, W10, W2, W25, W26, W3, W31, W32, W33, W4, W5, U1, U10, U11, U17, U18, U19, U2, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U3, U31, U32, U36, U38, U4, U42, U44, U45, U47, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9</p>	<p>classes, seminar, clinical classes</p>
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6.	NEPHROLOGY (45 hours) Semester 7/8 Glomerular disease Interstitial disease Reduced renal function Acute kidney injury (and critical care nephrology) The patient on dialysis The patient with urinary tract infection Drugs and renal disease	W1, W12, W13, W17, W18, W19, W2, W20, W21, W22, W25, W26, W29, W3, W30, W31, W32, W33, W34, W35, W36, W37, W4, W5, W8, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U3, U30, U31, U32, U33, U34, U35, U36, U38, U39, U4, U46, U47, U48, U5, U6, U7, U8, U9, K1, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, clinical classes
7.	HEMATOLOGY (35 hours) Semester 6 Symptoms, differential diagnosis and treatment of anemia Acute myeloproliferative and acute lymphoproliferative diseases - diagnosis, treatment and bone marrow transplantation Acute leukemia - diagnosis and treatment. Chronic myeloproliferative and chronic lymphoproliferative diseases - diagnosis and treatment. Chronic myeloid and lymphoid malignancies symptoms and treatment Anemia – symptoms and signs.	W1, W14, W2, W28, W29, W3, W30, W31, U1, U17, U18, U2, U21, U24, U3, U31, U4, U43, K1, K2, K3, K4, K6, K8	classes, seminar
8.	RHEUMATOLOGY (40 hours) Semester 7/8 Degenerative arthropathies Inflammatory arthropathies (Rheumat Spondyloarthropathiesoid arthritis; Spondyloarthropathies) Systemic conditions and connective tissue diseases	W1, W2, W26, W3, W4, W42, W43, W44, W45, U1, U17, U18, U24, U25, U26, U29, U3, U30, U38, U4, U42, U46, U5, U6, U7, U8, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

9.	<p>ALLERGOLOGY (45 hours)</p> <p>Semester 7/8</p> <p>Anaphylaxis - causes, symptoms and treatment</p> <p>Allergic rhinitis</p> <p>Atopic dermatitis</p> <p>Asthma and anaphylaxis.</p> <p>SLE and systemic vasculitis</p> <p>Autoimmune diseases - pathology, symptoms and sign.</p> <p>Hypersensitivity, allergy and atopy.</p> <p>Bronchial asthma - etiology, classification and treatment</p> <p>Aspirin-induced asthma</p> <p>Laboratory diagnosis in allergy and immunology</p> <p>Environmental allergens/ haptens - low and high molecular weight antigens</p> <p>Allergy and hypersensitivity in polluted areas</p> <p>Pathomechanism of allergy in polluted environment</p> <p>Immune recognition of drugs (The hapten and prohaptens concept. The p-i concept)</p> <p>Classification of drug hypersensitivity reactions (Antibody-mediated and T cell-mediated drug hypersensitivity)</p> <p>Systemic drug reactions: severe drug hypersensitivity syndromes</p> <p>Diagnosis of drug hypersensitivity (Clinical diagnosis. Identifying the culprit drug)</p> <p>Therapeutic aspects (Desensitization)</p> <p>In vitro allergy testing in the laboratory</p> <p>Monitoring of concentration of environmental airborne allergens and irritants at the workplace.</p> <p>Bakers' asthma; anaphylactic reactions to latex, skin disorders caused by environmental factors.</p>	<p>W1, W11, W12, W14, W15, W16, W17, W18, W19, W2, W20, W21, W22, W25, W26, W29, W3, W30, W31, W34, W39, W4, W5, U1, U2, U20, U24, U26, U3, U31, K1, K2, K3, K4, K7, K8</p>	<p>classes, seminar</p>
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10.	<p>TOXICOLOGY (20 hours)</p> <p>Semester 7/8</p> <p>The role and importance of toxicological information centers</p> <p>Selected pharmacokinetic problems in clinical toxicology</p> <p>Basic principles of therapeutic management in acute poisoning</p> <p>Specific clinical symptoms and organ damage.</p> <p>Selected organ damage: toxic and drug-induced liver damage, rhabdomyolysis.</p> <p>Diagnosis and handling of selected poisons: addictive substances, alcohols, toxic gases, heavy metals, plant protection products, corrosive substances</p>	<p>W18, W19, W2, W20, W21, W24, W25, W3, W34, W35, W36, W37, U1, U15, U19, U2, U21, U22, U23, U24, U3, U31, U39, U4, U49, U50, K3, K4, K6, K8</p>	<p>classes, seminar</p>
11.	<p>Practical occupational learning</p> <p>Semester 11/12 240 hours</p> <p>During course students are assigned to the one hospital department. Student's duties are: active participation in daily doctors' activities, like admission patients to the hospital, patients examination, planning tests and procedures, making differentiative diagnosis, prescribing treatment, discharging from the hospital and planning follow up visits.</p>	<p>W1, W10, W11, W12, W13, W14, W15, W17, W18, W19, W2, W20, W21, W22, W23, W24, W25, W26, W27, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U3, U30, U31, U32, U33, U34, U35, U36, U37, U38, U39, U4, U40, U41, U42, U43, U44, U5, U51, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9</p>	<p>clinical classes</p>

Course advanced

Semester 5, Semester 6

Teaching methods:

case study, clinical classes, seminar, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
classes	oral answer, multiple choice test	Active participation in classes, 100% attendance; After completing the course of propaedeutic of internal medicine the following components will constitute the evaluation: assistant evaluation, at least 4 complete patient records (disease history + physical exam + suggested further diagnosis and treatment). Final exam: multiple choice test (40 items), passing score 60%. After completing internal medicine course at 3rd academical year - final exam (20 items); passing score 60%.
seminar	oral answer, multiple choice test	Active participation in classes, 100% attendance; After completing the course of propaedeutic of internal medicine the following components will constitute the evaluation: assistant evaluation, at least 4 complete patient records (disease history + physical exam + suggested further diagnosis and treatment). Final exam: multiple choice test (40 items), passing score 60%. After completing internal medicine course at 3rd academical year - final exam (20 items); passing score 60%.

Semester 7, Semester 8

Teaching methods:

case study, classes / practicals, clinical classes, lecture, seminar, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
lecture	self-assessment	active participation in classes, 100% attendance, multiple choice test (20 items), passing score 60%
seminar	multiple choice test	active participation in classes, 100% attendance, multiple choice test (20 items), passing score 60%
classes	multiple choice test, credit	active participation in classes, 100% attendance, multiple choice test (20 items), passing score 60%

Semester 9, Semester 10

Teaching methods:

case study, classes / practicals, clinical classes, demonstration, discussion, problem solving method, case study method, group work, seminar, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
seminar	oral examination, test	active participation in classes, 100% attendance, multiple choice test (20 items), passing score 60%
classes	oral examination, classroom observation, test	active participation in classes, 100% attendance, multiple choice test (20 items), passing score 60%

Semester 11, Semester 12

Teaching methods:

classes / practicals, clinical classes, discussion, problem solving method, group work, professional practice, PBL Problem

Based Learning

Activities	Examination methods	Credit conditions
clinical classes	oral examination, classroom observation, test	Active participation in classes, 100% attendance The single-choice test (60 questions with 5 answers - one correct) - to pass at least 60% of correct answers are required. Oral exam including practical examination of the patients.

Additional info

Attendance and active participation in classes.

After completing the course of propaedeutic of internal medicine the following componets will connstitute the evaluation: assistant evaluation, at lest 4 complete patient records (disease history + physical exam + suggested further diagnosis and treatment), final exam - test.

After completing the course of internal medicine from various sections of internal medicine on each academic year (i.e. 3-5) the exam-test will be the bases for credit.

The final exam after completion the IM module. The single-choice test (60 questions with 5 answers - one correct) - to pass at least 60% of correct answers are required. Oral exam including practical examination of the patients.

Literature

Obligatory

1. Bates' Guide to Physical Examination & History Taking
2. Oxford Handbook of Clinical Medicine, Ninth Edition, Murray Longmore, Ian Wilkinson, Andrew Baldwin, and Elizabeth Wallin
3. Goldman's Cecil Medicine: Cecil Medicine (Single Volume) Lee Goldman, Andrew I. Schafer

Optional

1. Harrison's Principles of Internal Medicine: Volumes 1 and 2, 18th Edition
2. Rapid Interpretation of EKG's, Sixth Edition, Dale Dubin

Standard effects

Code	Content
B.U10	use databases, including online databases, and search for the necessary information using the available tools
B.U16	perform a pathophysiological analysis of selected clinical cases according to the PBCA (Problem Based Case Analysis) rule
B.U17	perform and interpret anthropometric measurements of nutritional status, is able to gather nutritional history and make a quantitative and qualitative assessment of intake (taking into account dietary supplements) using a nutritional computer program
B.U18	assess the reliability of the clinical trial
B.U19	understand the concepts describing the strength of the intervention in the study
B.U27	use computer simulators to support the medical decision-making process
B.U29	protect clinical data against unauthorized access
B.W18	processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body
B.W21	activity and mechanisms of regulation of all organs and systems of the human body, including the cardiovascular system, respiratory system, digestive system, urinary tract and skin layers, and the interrelations existing between them
B.W24	basic quantitative parameters describing the capacity of particular systems and organs, including the range of norms and demographic factors influencing the value of these parameters
B.W25	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes
B.W33	pathomechanisms of regulation disorders of all organs and systems of the human body, including: circulatory, respiratory, urinary and digestive systems, nervous system (central, peripheral and autonomous)
B.W34	the principles for assessing the power and credibility of the recommendations in the guidelines for action
B.W35	the types of observational and interventional studies and the rules governing their conduct
B.W39	computer-aided decision support for medical decisions with particular emphasis on clinical pathway techniques
B.W42	elements of the hospital patient service system
B.W43	selected online sources of medical information, with particular emphasis on genetic diseases, available on the Internet
B.W48	principles for the development of databases for patient care and research
B.W49	principles for the operation and use of electronic patient records
B.W50	principles of proper nutrition of a healthy and sick person and methods of assessing the state of nutrition
C.U10	interpret the results of microbiological tests
C.U18	assess toxicological hazards in specific age groups and in conditions of hepatic and renal failure, and prevent drug poisoning
C.U19	interpret the results of toxicological tests
C.U20	describe the changes in function of the organism in homeostasis disorder, determine its integrated reaction to physical effort, high and low temperature, blood or water loss, sudden verticalization, transition from sleep to wakefulness
C.W15	the consequences of human body exposure to various chemical and biological agents and the principles of prevention
C.W19	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management

Code	Content
C.W20	basic principles of disinfection, sterilization and aseptic management
C.W21	basic of development and mechanisms of immune system action, including specific and non-specific mechanisms of humoral and cellular immunity
C.W23	types of hypersensitivity reactions, types of immunodeficiency and basics of immunomodulation
C.W29	definition and pathophysiology of shock, with particular emphasis on differentiation of the causes of shock and multi-organ failure
C.W30	aetiology of haemodynamic disorders, regressive and progressive changes
C.W35	individual groups of therapeutic agents
C.W36	the main mechanisms of drug action, and their changes in the system depending on age
C.W37	the influence of disease processes on the metabolism and elimination of medicines
C.W38	basic rules of pharmacotherapy
C.W39	more important side effects of medicines, including those resulting from their interaction
C.W40	the problem of drug resistance, including multi-drug drug resistance
C.W43	basic concepts of general toxicology
C.W44	groups of medicines, the abuse of which can lead to poisoning
C.W45	symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected groups of drugs
C.W46	basic principles of diagnostic procedures in poisoning
C.W50	the consequences of inadequate nutrition, including prolonged hunger, excessive food intake and unbalanced diet, and disorders of digestion and absorption of digestive products
C.W51	the mechanism of hormone actions
C.W52	morphological changes in the most important non-cancer diseases affecting the entire organism (e.g. atherosclerosis, hypertension, diabetes, cardiopulmonary insufficiency, systemic infectious and immunological diseases, the most frequent hormonal disorders, the most frequent genetic diseases), and is able to link them with already acquired knowledge of anatomy, biochemistry and pathological physiology in order to deduce clinical symptoms
E.U1	carry out a medical history with an adult patient
E.U3	conduct a full and targeted physical examination of an adult patient
E.U6	conduct an approximate hearing and field of vision examination, and an otoscopic examination
E.U7	assess the general condition, state of consciousness and awareness of the patient
E.U12	perform differential diagnosis of the most common diseases of adults and children
E.U13	evaluate and describe the somatic and mental state of the patient
E.U14	recognize immediate life-threatening conditions
E.U15	recognize the condition after drinking alcohol, after using drugs and other substances
E.U16	plan diagnostic, therapeutic and prophylactic procedures
E.U17	analyze the potential adverse reactions of individual medicines and the interactions between them
E.U18	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy
E.U19	recognize the symptoms of drug dependence and propose treatment
E.U20	qualify the patient for home and hospital treatment

Code	Content
E.U21	recognize states in which the duration of life, functional state or patient preferences limit the conduct in accordance with the guidelines specified for a given disease
E.U22	make a functional assessment of a patient with a disability
E.U23	propose a rehabilitation program for the most common diseases
E.U24	interpret the results of laboratory tests and identify the causes of abnormalities
E.U25	apply nutritional treatment, including enteral and parenteral nutrition
E.U26	plan the management of exposure to blood-borne infections
E.U27	qualify the patient for vaccination
E.U28	collect and retain test material for use in laboratory diagnostics
E.U29	perform basic procedures and medical procedures including: 1) body temperature measurement, heart rate measurement, non-invasive blood pressure measurement, 2) monitoring of vital signs by means of a patient monitor, pulse oximetry, 3) spirometric examination, oxygen therapy, assisted ventilation and replacement ventilation, 4) introduction of the oropharyngeal tube, 5) intravenous, intramuscular and subcutaneous injections, cannulation of peripheral veins, collection of peripheral venous blood, collection of blood for culture, collection of arterialized capillary blood, collection of arterialized capillary blood, 6) taking nasal, throat and skin swabs, puncturing of the pleural cavity, 7) bladder catheterization in women and men, gastric tube, gastric lavage, gastric lavage, enema, 8) standard resting electrocardiogram with interpretation, electrical cardioversion and cardiac defibrillation, 9) simple strip tests and blood glucose measurements
E.U30	assist in the performance of the following procedures and medical procedures: 1) transfusion of blood and blood-derived products, 2) drainage of the pleural cavity, 3) puncture of the pericardial sac, 4) puncture of the peritoneal cavity, 5) lumbar puncture, 6) fine-needle biopsy, 7) epidermal tests, 8) intradermal and scarification tests and interpret their results
E.U32	plan specialist consultations
E.U33	implement basic treatment for acute poisoning
E.U34	monitor the condition of a patient poisoned with chemicals or drugs E.U35. assess bedsores and apply appropriate dressings
E.U35	assess pressure ulcers and use appropriate dressings
E.U36	proceed in case of injuries (dress or immobilize, dress and suture the wound)
E.U37	recognize the agony of the patient and determine his death
E.U38	maintain patient's medical records
E.U39	assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy
E.U42	recognise the state of overtraining and overloading of internal organs and motor organs associated with practicing sport. Is able to prevent and manage dehydration and physical exercise disorders in various conditional environments
E.U43	offer appropriate nutritional management to people in developmental age and adults with intensive exercise Interprets measures prohibited in sport. Identifies types and support measures
E.W1	environmental and epidemiological determinants of the most frequent diseases

Code	Content
E.W7	the causes, symptoms, principles of diagnosis and therapeutic management of the most common internal diseases and their complications in adults: 1) cardiovascular diseases, including ischemic heart disease, heart defects, endocarditis, myocardial infarction, pericardial infarction, heart failure (acute and chronic), diseases of arteries and venous vessels, arterial hypertension - primary and secondary, pulmonary hypertension, 2) respiratory system diseases, including respiratory tract diseases, chronic obstructive pulmonary disease, bronchial asthma, bronchial dilatation, cystic fibrosis, respiratory infections, interstitial diseases of the lungs, pleura, mediastinum, obstructive and central sleep apnea, respiratory failure (acute and chronic), respiratory tumors, 3) diseases of the digestive system, including diseases of the mouth, esophagus, stomach and duodenum, intestines, pancreas, liver, bile ducts and gallbladder, 4) diseases of the internal secretion system, including diseases of the hypothalamus and pituitary gland, thyroidism, parathyroidism, adrenal cortex and medulla, ovaries and testicles, and neuroendocrine tumors, polyglandular syndromes, various types of diabetes and metabolic syndrome - hypoglycaemia, obesity, dyslipidemia, 5) diseases of the kidneys and the urinary tract, including acute and chronic renal failure, glomerulonephrine and interstitial kidney diseases, kidney cysts, kidney stones, urinary tract infections, urinary tract neoplasms, in particular of bladder and kidney neoplasms, 6) hematopoietic diseases, including bone marrow aplasia, anemia, granulocytopenia and agranulocytosis, thrombocytopenia, acute leukemia, myeloproliferative and myelodysplastic-myeloproliferative tumours, myelodysplastic syndromes, mature B and T lymphocytes tumors, bleeding diatheses, thrombophilia, life-threatening conditions in hematology, blood disorders in other organ diseases, 7) rheumatic diseases, including systemic connective tissue diseases, systemic vasculitis, joint inflammations involving spinal cord, metabolic bone diseases, osteoporosis and osteoarthritis in particular, gout, 8) allergic diseases, including anaphylaxis and anaphylactic shock and angioedema, 9) water-electrolyte and acid-base disorders: dehydration conditions, overhydration conditions, electrolyte, acidic and alkaline disorders
E.W13	basic neurological symptom syndromes
E.W30	the concept of impairment and disability
E.W31	the role of medical rehabilitation and methods used in it
E.W46	specific diseases related to physical activity and competitive sports, also in the sports of the disabled and in girls and women
E.W47	principles of nutrition of physically active persons and athletes. Describes the difference between doping and support
E.W55	the indications and rules for performing liver biopsy and assists in performing procedure
O.K1	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures
O.K2	to be guided by the well-being of a patient
O.K3	respect medical confidentiality and patients' rights
O.K4	take actions towards the patient on the basis of ethical norms and principles, with an awareness of the social determinants and limitations of the disease
O.K5	perceive and recognize own limitations and self-assessing educational deficits and needs
O.K6	promote health-promoting behaviors
O.K7	use objective sources of information
O.K8	formulate conclusions from own measurements or observations
O.K9	implement the principles of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, also in a multicultural and multinational environment
O.K10	formulate opinions on the various aspects of the professional activity
O.K11	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others
O.U1	identify medical problems and prioritize medical management
O.U2	identify life-threatening conditions that require immediate medical intervention
O.U3	plan the diagnostic procedure and interpret its results

Code	Content
O.U4	implement appropriate and safe therapeutic treatment and predict its effects
O.U5	plan own learning activities and constantly learn in order to update own knowledge
O.U6	inspire the learning process of others
O.U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient
O.U8	communicate and share knowledge with colleagues in a team
O.U9	critically evaluate the results of scientific research and adequately justify the position
O.W1	development, structure and functions of the human body in normal and pathological conditions
O.W2	symptoms and course of diseases
O.W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states
O.W4	ethical, social and legal conditions for practicing the medical profession and the principles of health promotion, based on scientific evidence and accepted standards
O.W5	methods of conducting scientific research