UNIWERSYTET JAGIELLOŃSKI
COLLEGIUM MEDICUM

Program studiów

Wydział:	Wydział Lekarski
Kierunek:	Medical Program
Poziom kształcenia:	jednolite magisterskie
Forma kształcenia:	stacjonarne
Rok akademicki:	2020/21

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Charakterystyka kierunku

Informacje podstawowe

Nazwa wydziału:	Wydział Lekarski
Nazwa kierunku:	Medical Program
Poziom:	jednolite magisterskie
Profil:	ogólnoakademicki
Forma:	stacjonarne
Język studiów:	angielski

Przyporządkowanie kierunku do dziedzin oraz dyscyplin, do których odnoszą się efekty uczenia się

Nauki medyczne	**100,0%**

Charakterystyka kierunku, koncepcja i cele kształcenia

Charakterystyka kierunku

The Medical Program at the Faculty of Medicine of the Jagiellonian University Medical College is a dynamic, modern and significant program on the European map of medical universities, boasting excellent scientific and didactic staff consisting of 150 full professors and doctors with habilitation degrees, and over 450 doctors who, drawing on the wealth of centuries-old tradition, set new directions of thought development through the highest quality scientific research and teaching.
Every year over 400 doctors graduate from the Faculty of Medicine, and every year the Faculty of Medicine of the JU MC enjoys great interest among candidates for medical universities.
The current shape of medical studies is the result of many years of experience in professional education of medical staff in the care of human health and life.
Students have a rich, well-equipped scientific and didactic base, highly qualified scientific and didactic staff, specialist clinical base, and modern scientific and research infrastructure at their disposal.
Medical studies are uniform master's studies lasting 12 semesters. The curriculum of the first three years of studies includes teaching in the field of theoretical disciplines of medical sciences, i.e. normal anatomy, biology with embryology, histology with cytophysiology, general and organic chemistry, biochemistry, physiology, biophysics, microbiology, immunology, genetics, pathomorphology, pathophysiology, pharmacology. From the first year of their studies, they are familiarized with the rules of ethics and learn about relations and communication with patients. During the first, second and third year of studies, students are also taught the basics of clinical sciences in the form of first aid and elements of nursing, propedeutics of medicine, pediatrics and internal diseases, as well as epidemiology, history of medicine, history of philosophy, sociology of medicine, medical ethics, health psychology, computer science with biometrics, and two foreign languages. From the fourth to the sixth year of studies, basic clinical disciplines are taught, i.e. pediatrics with aediatric surgery, internal diseases, surgery, orthopedics and traumatology, gynecology and obstetrics, ophthalmology, infectious diseases, psychiatry, neurology with neurosurgery, laryngology, as well as hygiene, radiology, clinical and environmental toxicology, emergency medicine, public health, nuclear medicine, occupational medicine and diseases, immunology and microbiology. The studies also include a program of numerous optional courses in neurology, medical cytobiology, molecular epidemiology, psychoanalysis, and clinical disciplines expanding the mandatory knowledge in cardiology, anesthesiology and intensive care, palliative care, surgery, emergency medicine and methodology of medical research. In order to pass the individual

years of studies, it is necessary to complete program practices in the field of patient care, internal diseases, pediatrics, gynecology, general surgery, emergency aid and out-patient health care (family physician). Graduates of the medical faculty receive a diploma and a professional title of medical doctor (Polish: lekarz).

Koncepcja kształcenia

The aim of medical studies is to teach the fundamental theories and principles of medical practice, to transfer the skills of communication and cooperation with patients, colleagues and other medical professionals, and to prepare to lead human teams. The studies should provide the graduate with the necessary knowledge and skills, as well as ethical principles ensuring professional and safe medical care.
In accordance with the current teaching standards, the graduate has theoretical and practical skills in prevention and treatment necessary to practice the profession of a medical doctor.
In terms of knowledge, the graduate knows and understands the development, structure and functions of the human body in normal and pathological conditions, can recognize the symptoms and course of diseases, knows the methods of diagnostic and therapeutic management appropriate for specific conditions, and also understands the ethical, social and legal conditions of the medical profession and the principles of health promotion, and his/her knowledge is based on scientific evidence and accepted norms, and is also familiarized with methods of conducting scientific research.
In terms of skills, graduates are able to recognize medical problems and priorities in the field of medical management, recognize life-threatening conditions requiring immediate medical intervention, plan diagnostic procedures and interpret their results, as well as implement appropriate and safe therapeutic management and predict its effects. Graduates also know how to plan their own educational activity and constantly improve their education in order to update their knowledge and inspire the learning process of others. Preparation for the medical profession also includes communicating with patients and their families in an atmosphere of trust, taking into account patients' needs, communicating with colleagues in a team, and sharing knowledge, as well as critically evaluating the results of scientific research with appropriate justification of a position.
In terms of social competences, graduates are ready to establish and maintain deep and respectful contact with patients, as well as to show understanding for differences in world-related outlooks and cultures. The main principle for a graduate is to be guided by the well-being of a patient and to respect the medical confidentiality and rights of a patient. Further competences include the ability to take action against patients on the basis of norms and ethical principles with an awareness of social determinants and limitations resulting from the disease, and the ability to see and recognize one's own limitations and to self-assess educational deficits and needs. Graduates are prepared to promote health-promoting behaviors, are taught to use objective sources of information and formulate conclusions from their own measurements or observations. In terms of team work, a student is taught to implement the principles of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, including in a multicultural and multinational environment. Graduate is competent to formulate opinions on various aspects of professional activity and has an educated ability to take responsibility for decisions taken in the course of professional activity, including in terms of their own and other people's safety.

Cele kształcenia

1. acquiring the ability to plan and implement preventive, diagnostic and therapeutic procedures on a scientific basis which respects the principles of humanity
2. acquiring the ability to critically assess research results
3. ability to conduct scientific research and to spread their results
4. preparation for cooperation with other health care providers
5. preparation for managing human teams
6. readiness to continue professional education
7. readiness to continue education in doctoral schools and to participate in medical research

Potrzeby społeczno-gospodarcze

Wskazanie potrzeb społeczno-gospodarczych utworzenia kierunku

The statistics of the The Polish Chamber of Physicians and Dentists show that in Poland there is a great need for reliable doctors who are capable of offering appropriate preventive, diagnostic and therapeutic methods, based on solid theoretical foundations and the results of the latest research, adapted to the needs of individuals and groups of people. The need for education in a medical field is therefore one of the most urgent needs in the current medical situation in the country.

Wskazanie zgodności efektów uczenia się z potrzebami społeczno-gospodarczymi

Thanks to the implementation of the assumed learning outcomes, graduates of medical studies, in accordance with their knowledge and skills acquired during their studies, are prepared to work in: public and non-public health care institutions; education; research institutions and research and development centers; institutions dealing with counseling and dissemination of knowledge in the field of health-promoting education, which is the answer to the increase in demand for medical services caused by demographic and civilization trends.

Nauka, badania, infrastruktura

Główne kierunki badań naukowych w jednostce

The academic staff at the Faculy of Medicine, which conducts classes in the field of medicine, participates in the implementation of a number of scientific research and scientific and implementation works in the field of medical and health sciences. Over the last 5 years, the research teams at the Faculty of Medicine participated in the implementation of over 300 projects financed from the National Science Centre, The National Centre for Research and Development, The Ministry of Health, The Ministry of Science
and Higher Education, international funds (including other EU programs) and several hundred projects from the university's own funds. The employees of the Faculty of Medicine implement projects in the scope of searching for new pathomechanisms and possibilities of personalized diagnosis and therapy of modern-age diseases (e.g. of the cardiovascular system, malignant tumors, diabetes, obesity, neurological and mental diseases, digestive system diseases, diseases related to the aging of society), interdisciplinary issues (e.g. cardiometabolic, cardiooncological, neuroendocrine problems), reproductive health problems and developmental age medicine, and therapeutic applications of regenerative medicine (e.g. the use of stem cells in the treatment of serious diseases). All units involved in the implementation of the program in the medical field, both in pre-clinical sciences and in clinical subjects, conduct scientific research.

Związek badań naukowych z dydaktyką

The majority of the employees of the Faculty of Medicine combine teaching with scientific work. The knowledge, skills and experience gained by academic teachers as a result of their research and development work are used in the educational process as a basis for modification and modernization of educational content, both in pre-clinical and clinical subjects. There are more than 100 student scientific clubs at the Faculty, at the pre-clinical and clinical units. The students who work there supplement their medical knowledge and learn the methodology of scientific work. The results of their work are presented every year at numerous international scientific conferences. Student scientific circles operating at the Department of Medical Didactics participate in research aimed at the optimization of the education process at the Faculty of Medicine. Doctoral students are involved in the implementation of most of the scientific projects of the Faculty's researchers, while students participate in a large number of projects. Doctoral students may apply for funds for research in the JUMC competition, whereas students may apply for Student Grants. Every year, several "diamond grants" financed by the Ministry of Science and Higher Education are held at the Faculty of Medicine.

Opis infrastruktury niezbędnej do prowadzenia kształcenia

The teaching infrastructure used for the implementation of the medical curriculum is based on three main components: lecture halls (17 in total), seminar and training rooms (over 130 available, in particular organizational units conducting teaching classes), and the hospital (and laboratory) base of the University Hospital in Kraków, the University Children's Hospital in Kraków, as well as units cooperating with the Faculty. These units constitute both the didactic and scientific base of the Faculty, being the seats of appropriate Departments, Clinics and Departments. Lecture halls are equipped with appropriate equipment, i.e. multimedia projectors, computers. Students have access to the resources of the Medical Library and the resources of the Jagiellonian Library. Equipment and infrastructure are constantly updated, supplemented and developed in accordance with the demand resulting from the implementation of the education program. In 2019, a new seat of the University Hospital in Kraków-Prokocim opened, with a teaching base of 51 seminar rooms and a lecture hall, as well as a system of comprehensive sound and image transmission between all operating, endoscopic, imaging diagnostics and teaching rooms. In 2020, the construction of the Centre for Innovative Medical Education (CIEM), located in the immediate vicinity of the new University Hospital headquarters, was completed, including 10 high-fidelity simulation rooms, rooms for technical skills improvement, a laboratory for teaching of clinical skills, low-fidelity simulation rooms and rooms for Objective Structured Clinical Examinations (OSCE).

Program

Podstawowe informacje

Klasyfikacja ISCED:	0912
Liczba semestrów:	12
Tytuł zawodowy nadawany absolwentom:	lekarz

Opis realizacji programu:

The curriculum of studies at the Faculty of Medicine is based on the didactic and research facilities of the Faculty of Medicine of the Jagiellonian University Medical College in cooperation with external entities, thanks to which it is possible to train practical skills of students in various conditions and environments, which prepares them for later employment in the medical profession. The education program is primarily aimed at developing practical/clinical skills based on a reliable theoretical base and gained experience with patients. All students follow the same program.

Liczba punktów ECTS

konieczna do ukończenia studiów	365
w ramach zajęć prowadzonych z bezpośrednim udziałem nauczycieli akademickich lub innych osób prowadzących zajęcia	216
którą student musi uzyskać w ramach zajęć z zakresu nauki języków obcych	18
którą student musi uzyskać w ramach modułów realizowanych w formie fakultatywnej	11
którą student musi uzyskać w ramach praktyk zawodowych	20
którą student musi uzyskać w ramach zajęć z dziedziny nauk humanistycznych lub nauk społecznych	8

Liczba godzin zajęć

Łączna liczba godzin zajęć: 5999

Praktyki zawodowe

Wymiar, zasady i forma odbywania praktyk zawodowych

As part of the medical studies program, students are required to complete work experience in the amount of 600 teaching hours, which corresponds to 20 ECTS credits. Internships are carried out during the summer holidays (July-August) between the first and fifth year of studies, in hospitals in the country and abroad. They take place in the area of patient care, internal diseases, pediatrics, gynecology, general surgery, emergency care and out-patient health care (family physician). All apprenticeships are supervised by the internship coordinators.

Ukończenie studiów

Wymogi związane z ukończeniem studiów (praca dyplomowa/egzamin dyplomowy/inne)

The condition for graduation from the Medical Faculty of the Jagiellonian University Medical College is to obtain credit for all subjects and practical training required by the study plan. In accordance with the current teaching standards, the graduate has theoretical and practical skills in prevention and treatment necessary to practice the profession of a medical doctor.

Efekty uczenia się

Wiedza

Ogólne

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
O.W1	development, structure and functions of the human body in normal and pathological conditions	P7U_W, P7S_WG
O.W2	symptoms and course of diseases	P7U_W, P7S_WG
O.W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	P7U_W, P7S_WG
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	P7U_W, P7S_WG
O.W5	methods of conducting scientific research	P7U_W, P7S_WG

Szczegółowe

A. Morphological education

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
A.W1	anatomical, histological and embryological denominations in Polish and English	P7U_W, P7S_WG
A.W2	structure of human body in topographic (upper and lower extremities, thorax, abdomen, pelvis, back, neck, head) and functional (osteoarticular system, muscular system, circulatory system, respiratory system, digestive system, urinary system, genital system, nervous system and sensory organs, integuments) approaches	P7U_W, P7S_WG
A.W3	topographical relations between individual organs	P7U_W, P7S_WG
A.W4	basic cellular structures and their functional specializations	P7U_W, P7S_WG
A.W5	microarchitecture of tissues, extracellular matrix and organs	P7U_W, P7S_WG
A.W6	stages of development of the human embryo, the structure and function of the membranes and placenta, stages of development of individual organs and the influence of harmful factors on the development of the embryo and fetus (teratogenic)	P7U_W, P7S_WG

B. Scientific basics of medicine

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
B.W1	water and electrolyte management in biological systems	P7U_W, P7S_WG
B.W2	acid-base balance and buffer mechanism, and their importance in systemic homeostasis	P7U_W, P7S_WG
B.W3	terms: solubility, osmotic pressure, isotonia, colloidal solutions and Gibbs-Donnan equilibrium	P7U_W, P7S_WG

Kod	Treść	PRK
B.W4	basic reactions of inorganic and organic compounds in aqueous solutions	P7U_W, P7S_WG
B.W5	physical laws describing fluid flow and factors affecting vascular resistance to blood flow	P7U_W, P7S_WG
B.W6	natural and artificial sources of ionising radiation and their interaction with matter	P7U_W, P7S_WG
B.W7	physicochemical and molecular basis of sensory organs activity	P7U_W, P7S_WG
B.W8	the physical basis of non-invasive imaging methods	P7U_W, P7S_WG
B.W9	physical fundamentals of selected therapeutic techniques, including ultrasound and irradiation	P7U_W, P7S_WG
B.W10	structure of simple organic compounds included in macromolecules present in cells, extracellular matrix and body fluids	P7U_W, P7S_WG
B.W11	structure of lipids and polysaccharides and their functions in cellular and extracellular structures	P7U_W, P7S_WG
B.W12	primary, secondary, tertiary and quaternary structure of proteins, as well as post-translational and functional modifications of proteins and their importance	P7U_W, P7S_WG
B.W13	nucleotide functions in the cell, primary and secondary DNA and RNA structures and chromatin structure	P7U_W, P7S_WG
B.W14	functions of the genome, transcriptome and human proteome, and basic methods used in their examination, processes of DNA replication, repair and recombination, transcription and translation and degradation of DNA, RNA and proteins, as well as concepts for regulation of gene expression	P7U_W, P7S_WG
B.W15	basic catabolic and anabolic pathways, ways of regulating them, and the influence of genetic and environmental factors on them	P7U_W, P7S_WG
B.W16	metabolic profiles of basic organs and systems	P7U_W, P7S_WG
B.W17	methods of intercellular communication, as well as between the cell and the extracellular matrix, and signal pathways in the cell, and examples of disorders in these processes leading to the development of cancer and other diseases	P7U_W, P7S_WG
B.W18	processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body	P7U_W, P7S_WG
B.W19	in the basic scope, the subject matter of stem cells and their application in medicine	P7U_W, P7S_WG
B.W20	basics of induction and transmission in the nervous system and higher nervous actions as well as physiology of striated and smooth muscles and blood functions	P7U_W, P7S_WG
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	P7U_W, P7S_WG
B.W22	the course and regulation of reproductive functions in women and men	P7U_W, P7S_WG
B.W23	the mechanism of the body's aging	P7U_W, P7S_WG
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	P7U_W, P7S_WG
B.W25	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	P7U_W, P7S_WG
B.W26	basic IT and biostatistical tools used in medicine, including medical databases, spreadsheets and computer graphics basics	P7U_W, P7S_WG
B.W27	basic methods of statistical analysis used in population and diagnostic studies	P7U_W, P7S_WG
B.W28	the possibilities of modern telemedicine as a tool to support the work of a doctor	P7U_W, P7S_WG

Kod	Treść	PRK
B.W29	principles of conducting scientific, observational and experimental studies and in vitro studies for the development of medicine	P7U_W, P7S_WG
B.W30	basic laws describing electrical and magnetic phenomena in the body	P7U_W, P7S_WG
B.W31	basic laws of mechanics referring to the skeletal and muscular system	P7U_W, P7S_WG
B.W32	biochemical fundamentals of xenobiotic metabolic processes	P7U_W, P7S_WG
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)	P7U_W, P7S_WG
B.W34	the principles for assessing the power and credibility of the recommendations in the guidelines for action	P7U_W, P7S_WG
B.W35	the types of observational and interventional studies and the rules governing their conduct	P7U_W, P7S_WG
B.W36	on-line data presentation techniques	P7S_WK
B.W37	rules of using materials published on the Internet (copyright, quoting law, methods of obtaining free materials)	P7U_W, P7S_WG
B.W38	the means of secure Internet communication	P7S_WK
B.W39	computer-aided decision support for medical decisions with particular emphasis on clinical pathway techniques	P7U_W, P7S_WG
B.W40	basic techniques of representation of medical knowledge for intelligent computer systems in medicine	P7U_W, P7S_WG
B.W41	concepts related to on-line data transmission	P7S_WK
B.W42	elements of the hospital patient service system	P7S_WK
B.W43	selected online sources of medical information, with particular emphasis on genetic diseases, available on the Internet	P7S_WK
B.W44	principles of operation and organisation of teleconferences	P7S_WK
B.W45	types of IT tools supporting the process of remote lifelong learning with particular emphasis on simulators available on-line	P7S_WK
B.W46	the opportunities and limitations offered by new information technology simulation techniques on examples of selected European research projects	P7S_WK
B.W47	the types of data used in electronic medical records	P7S_WK
B.W48	principles for the development of databases for patient care and research	P7S_WK
B.W49	principles for the operation and use of electronic patient records	P7U_W, P7S_WG
B.W50	principles of proper nutrition of a healthy and sick person and methods of assessing the state of nutrition	P7U_W, P7S_WG

C. Preclinical course

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
C.W1	basic concepts in the field of genetics	P7U_W, P7S_WG
C.W2	phenomena of gene coupling and interaction	P7U_W, P7S_WG
C.W3	normal human karyotype and different types of sex determination	P7U_W, P7S_WG

Kod	Treść	PRK
C.W4	chromosome structure and molecular mutagenic background	P7U_W, P7S_WG
C.W5	the rules for the inheritance of different numbers of traits, the inheritance of quantitative traits, the independent inheritance of traits and the inheritance of non-nuclear genetic information	P7U_W, P7S_WG
C.W6	genetic determinants of human blood groups and serological conflict in the Rh system	P7U_W, P7S_WG
C.W7	aberrations of autosomes and heterosomes that cause disease, including oncogenesis and cancer	P7U_W, P7S_WG
C.W8	factors influencing the primary and secondary genetic balance of the population	P7U_W, P7S_WG
C.W9	basics of diagnostics of gene and chromosomal mutations responsible for hereditary and acquired diseases, including neoplastic diseases	P7U_W, P7S_WG
C.W10	benefits and threats resulting from the presence of genetically modified organisms (GMOs) in the ecosystem	P7U_W, P7S_WG
C.W11	genetic mechanisms for the acquisition of drug resistance by microorganisms and cancer cells	P7U_W, P7S_WG
C.W12	micro-organisms, including pathogenic and present in the physiological flora	P7U_W, P7S_WG
C.W13	epidemiology of viral and bacterial infections and infections with fungi and parasites, taking into account their geographical distribution	P7U_W, P7S_WG
C.W14	the impact of abiotic and biotic (viruses, bacteria) environmental factors on the human body and human population and their pathways into the human body	P7S_WK
C.W15	the consequences of human body exposure to various chemical and biological agents and the principles of prevention	P7U_W, P7S_WG
C.W16	human-invasive forms or stages of parasitic fungi, protozoa, helminths and arthropods of selected parasitic species, taking into account their geographical distribution	P7U_W, P7S_WG
C.W17	the principle of the parasite-host system and the principal disease symptoms caused by the parasites	P7U_W, P7S_WG
C.W18	symptoms of iatrogenic infections, their pathways and pathogens causing changes in individual organs	P7U_W, P7S_WG
C.W19	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management	P7U_W, P7S_WG
C.W20	basic principles of disinfection, sterilization and aseptic management	P7U_W, P7S_WG
C.W21	basic of development and mechanisms of immune system action, including specific and non-specific mechanisms of humoral and cellular immunity	P7U_W, P7S_WG
C.W22	major histocompatibility complex	P7U_W, P7S_WG
C.W23	types of hypersensitivity reactions, types of immunodeficiency and basicss of immunomodulation	P7U_W, P7S_WG
C.W24	issues related to cancer immunology	P7U_W, P7S_WG
C.W25	the genetic basis for donor and recipient selection and the basics for transplantation immunology	P7U_W, P7S_WG
C.W26	pathomorphological nomenclature	P7U_W, P7S_WG
C.W27	basic mechanisms of cell and tissue damage	P7U_W, P7S_WG
C.W28	clinical course of specific and non-specific inflammations, as well as tissue and organ regeneration processes	P7U_W, P7S_WG

Kod	Treść	PRK
C.W29	definition and pathophysiology of shock, with particular emphasis on differentiation of the causes of shock and multi-organ failure	P7U_W, P7S_WG
C.W30	aetiology of haemodynamic disorders, regressive and progressive changes	P7U_W, P7S_WG
C.W31	issues related to detailed pathology of organs, macro- and microscopic images and clinical course of pathomorphological changes in particular organs	P7U_W, P7S_WG
C.W32	consequences of developing pathological changes for topographically adjacent organs	P7U_W, P7S_WG
C.W33	external and internal pathogens, both modifiable and non-modifiable	P7U_W, P7S_WG
C.W34	clinical forms of the most frequent diseases of particular systems and organs, metabolic diseases and disorders of water-electrolyte, hormonal and acid-base metabolism	P7U_W, P7S_WG
C.W35	individual groups of therapeutic agents	P7U_W, P7S_WG
C.W36	the main mechanisms of drug action, and their changes in the system depending on age	P7U_W, P7S_WG
C.W37	the influence of disease processes on the metabolism and elimination of medicines	P7U_W, P7S_WG
C.W38	basic rules of pharmacotherapy	P7U_W, P7S_WG
C.W39	more important side effects of medicines, including those resulting from their interaction	P7U_W, P7S_WG
C.W40	the problem of drug resistance, including multi-drug drug resistance	P7U_W, P7S_WG
C.W41	indications for genetic tests performed with the aim of individualizing pharmacotherapy	P7U_W, P7S_WG
C.W42	basic directions of therapy development, in particular the possibilities of cellular, gene and targeted therapy in specific diseases	P7U_W, P7S_WG
C.W43	basic concepts of general toxicology	P7U_W, P7S_WG
C.W44	groups of medicines, the abuse of which can lead to poisoning	P7U_W, P7S_WG
C.W45	symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected groups of drugs	P7U_W, P7S_WG
C.W46	basic principles of diagnostic procedures in poisoning	P7U_W, P7S_WG
C.W47	influence of oxidative stress on cells and its importance in the pathogenesis of diseases and aging processes	P7U_W, P7S_WG
C.W48	the consequences of vitamin or mineral deficiencies and their excess in the body	P7U_W, P7S_WG
C.W49	enzymes involved in digestion, the mechanism of hydrochloric acid production in the stomach, the role of bile, the course of absorption of digestive products	P7U_W, P7S_WG
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	P7U_W, P7S_WG
C.W51	the mechanism of hormone actions	P7U_W, P7S_WG
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	P7U_W, P7S_WG

Kod	Treść	PRK
C.W53	pre-cancerous and high-risk conditions related to cancer, neoplastic transformation processes with their morphological signs, principles of cancer classification according to WHO, the most important risk factors, prognostic and predictive, and methods of histopathological and cytological testing and supporting molecular tests used in cancer diagnosis, detection and monitoring pre-cancerous conditions, and also understands the importance of proper diagnosis of histopathology cancer for proper treatment	P7U_W, P7S_WG
C.W54	pathogenesis and morphological changes of diseases associated with advanced age, including those particularly important in an aging society, the most frequent neurodegenerative diseases (e.g. Alzheimer's disease)	P7U_W, P7S_WG
C.W55	morphological changes, and understands the pathogenesis of critical pathological conditions brain such as swelling, ischemia, hemorrhages, effects of exogenous substances (e.g. alcohol, CO) and mechanical injury	P7U_W, P7S_WG
C.W56	morphological changes in the most common pathologies of the pediatric period, including in particular perinatal pathologies and genetic diseases and developmental disorders (defects) in children, and is able to link them with teratogenic, genetic factors and perinatal trauma	P7U_W, P7S_WG
C.W57	the importance of post-mortem examination as an examination verifying the diagnosis and important for improving the quality of hospital work and for the self-education of a doctor, and this knowledge is supported by direct, i.e. personal active participation in autopsy	P7U_W, P7S_WG
C.W58	the subject of basic (including histochemistry and immunohistochemistry) techniques used in pathomorphological diagnostics and selected molecular techniques (FISH, etc.), and understands their determinants related to the protection of material, and knows the rules of evaluation and interpretation of macro- and microscopic material to be examined	P7U_W, P7S_WG

D. Behavioral and social sciences with elements of professionalism

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
D.W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	P7U_W, P7S_WG
D.W2	social factors influencing behaviour in health and disease, particularly in chronic disease	P7U_W, P7S_WG
D.W3	forms of violence, models explaining domestic and institutional violence, the social determinants of the various forms of violence and the role of the doctor in recognizing it	P7U_W, P7S_WG
D.W4	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	P7U_W, P7S_WG
D.W5	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	P7U_W, P7S_WG
D.W6	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	P7U_W, P7S_WG
D.W7	psychosocial consequences of hospitalization and chronic disease	P7U_W, P7S_WG
D.W8	functioning of health care system entities and social role of a physician	P7U_W, P7S_WG
D.W9	basic psychological mechanisms of human functioning in health and disease	P7U_W, P7S_WG

Kod	Treść	PRK
D.W10	the role of the patient's family in the treatment process	P7S_WK
D.W11	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	P7S_WK
D.W12	the role of stress in etiopathogenesis and disease progression, and the mechanisms for coping with stress	P7U_W, P7S_WG
D.W13	mechanisms, objectives and treatment options for psychoactive substance dependence	P7U_W, P7S_WG
D.W14	the principles of health promotion, its tasks and main lines of action, with particular reference to the role of elements of a healthy lifestyle	P7S_WK
D.W15	principles of motivating the patient to health-promoting behaviors and informing about unsuccessful prognosis	P7U_W, P7S_WG
D.W16	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	P7S_WK
D.W17	patient's rights	P7S_WK
D.W18	principles of teamwork	P7S_WK
D.W19	cultural, ethnic and national determinants of human behavior	P7U_W, P7S_WG
D.W20	the history of medicine, the medicine of primitive peoples and ancient civilizations and the characteristic features of medieval medicine	P7S_WK
D.W21	the characteristics of modern medicine and its most important discoveries	P7S_WK
D.W22	the process of shaping new specialties in the field of scientific discipline - medical sciences and achievements of leading representatives of Polish and world medicine	P7U_W, P7S_WK
D.W23	basics of evidence-based medicine	P7S_WK
D.W24	standards relating to patients' rights	P7S_WK

E. Clinical non-procedural medical disciplines

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
E.W1	environmental and epidemiological determinants of the most frequent diseases	P7U_W, P7S_WG
E.W2	the principles of nutrition of healthy and sick children, including breastfeeding, preventive vaccination and child health monitoring	P7U_W, P7S_WG

Kod	Treść	PRK
E.W3	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	P7U_W, P7S_WG
E.W4	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	P7U_W, P7S_WG
E.W5	basic methods of fetal diagnostics and therapy	P7U_W, P7S_WG
E.W6	the most common life-threatening conditions in children and the rules of conduct in these conditions	P7U_W, P7S_WG
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	P7U_W, P7S_WG
E.W8	course and symptoms of the aging process and the principles of the overall geriatric assessment and interdisciplinary care for an elderly patient	P7U_W, P7S_WG
E.W9	the causes and basic differences in the most common diseases in the elderly and the principles of management in basic geriatric syndromes	P7U_W, P7S_WG

Kod	Treść	PRK
E.W10	the basic principles of pharmacotherapy for diseases in the elderly	P7U_W, P7S_WG
E.W11	dangers associated with the hospitalisation of the elderly	P7U_W, P7S_WG
E.W12	basic principles of organizing care for the elderly and the burden on the carer of the elderly	P7U_W, P7S_WG
E.W13	basic neurological symptom syndromes	P7U_W, P7S_WG
E.W14	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	P7U_W, P7S_WG
E.W15	basic concepts of the pathogenesis of mental disorders	P7U_W, P7S_WG
E.W16	the general symptomatology of mental disorders and the rules for classifying them according to the main classification systems	P7U_W, P7S_WG
E.W17	symptoms, principles of diagnosis and therapeutic management in the most frequent mental disorders, including 1) schizophrenia, 2) affective disorders, 3) neurotic and adaptive disorders, 4) nutritional disorders, 5) disturbances related to the intake of psychoactive substances, 6) sleep disorders	P7U_W, P7S_WG
E.W18	principles of diagnostics and emergency management in psychiatry, including suicide issues	P7U_W, P7S_WG
E.W19	the specificity of mental disorders and their treatment in children, adolescents and in old age	P7U_W, P7S_WG
E.W20	symptoms of mental disorders in the course of somatic diseases, their influence on the course of the basic disease and prognosis and the principles of their treatment	P7U_W, P7S_WG
E.W21	the problem of human sexuality and fundamental disorders associated with it	P7U_W, P7S_WG
E.W22	rules on the protection of mental health, with particular reference to the rules on admission to a mental hospital	P7U_W, P7S_WK
E.W23	environmental and epidemiological determinants of the most frequent human neoplastic diseases	P7U_W, P7S_WG
E.W24	basics of early detection of neoplastic diseases and principles of screening in oncology	P7U_W, P7S_WG
E.W25	possibilities of modern neoplastic therapy, including multimodal therapy, perspectives of cellular and gene therapies and their adverse effects	P7U_W, P7S_WG
E.W26	principles of combination therapies in oncology, algorithms of diagnostic and therapeutic procedures in the most common human cancers	P7U_W, P7S_WG
E.W27	principles of diagnosis and therapeutic management in the most common problems of palliative medicine, including 1) symptomatic treatment of the most common somatic symptoms, 2) cachexia management and the prevention and treatment of bedsores, 3) the most common emergencies in palliative medicine	P7U_W, P7S_WG
E.W28	principles for palliative treatment of terminal patient	P7U_W, P7S_WG
E.W29	principles for the treatment of pain, including cancer and chronic pain	P7U_W, P7S_WG
E.W30	the concept of impairment and disability	P7U_W, P7S_WG
E.W31	the role of medical rehabilitation and methods used in it	P7U_W, P7S_WG

Kod	Treść	PRK
E.W32	basis rules of prevention, rules of conduct in the case of occupational exposure on dangerous and harmful factors	P7U_W, P7S_WG
E.W33	rules of conduct in the event of the detection of an infectious disease	P7U_W, P7S_WG
E.W34	causes, symptoms, principles of diagnosis, therapeutic and prophylactic management in the most common bacterial, viral, parasitic and fungal diseases, including pneumococcal infections, viral hepatitis, acquired immunodeficiency syndrome (AIDS), sepsis and hospital infections	P7U_W, P7S_WG
E.W35	basic features, environmental and epidemiological conditions of the most common human skin diseases	P7U_W, P7S_WG
E.W36	the causes, symptoms, principles of diagnosis and therapeutic management of the most common sexually transmitted diseases	P7U_W, P7S_WG
E.W37	the causes, symptoms, principles of diagnosis and therapeutic management of the most common hereditary diseases	P7U_W, P7S_WG
E.W38	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases and specific problems in the practice of a family physician	P7U_W, P7S_WG
E.W39	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	P7U_W, P7S_WG
E.W40	theoretical and practical basics of laboratory diagnostics	P7U_W, P7S_WG
E.W41	possibilities and limitations of laboratory tests in emergency situations	P7U_W, P7S_WG
E.W42	indications for the implementation of monitored therapy	P7U_W, P7S_WG
E.W43	basic pharmacoeconomic concepts	P7S_WK
E.W44	health effects of systematic physical activity of children and adolescents and physical activity of adults in prevention of selected diseases	P7U_W, P7S_WG
E.W45	the specificity of the study in sports medicine, including exercise capacity tests. Knows the rules of medical certification in children, adolescent and adult sportsmen	P7U_W, P7S_WG
E.W46	specific diseases related to physical activity and competitive sports, also in the sports of the disabled and in girls and women	P7U_W, P7S_WG
E.W47	principles of nutrition of physically active persons and athletes. Describes the difference between doping and support	P7U_W, P7S_WG
E.W48	epidemiological problems of infectious diseases in the world and in Poland	P7U_W, P7S_WG
E.W49	causes and symptoms a) HIV infection and acquired immune deficiency syndrome b) hepatotropic virus infections with HAV, HBV, HCV, HCV c) tick-borne diseases d) zoonoses e) anaerobic infections f) organ mycoses g) infectious diseases of childhood h) fever of unknown origin i) sepsis and septic shock j) infectious diseases of the central nervous system k) tetanus and botulism l) selected tropical diseases m) acute gastrointestinal infections n) influenza and SARS	P7U_W, P7S_WG
E.W50	Symptoms and rules for managing infectious diseases that are life-threatening	P7U_W, P7S_WG
E.W51	principles of immunoprophylaxis of infectious diseases	P7U_W, P7S_WG
E.W52	principles of diagnostics of infectious diseases and can interpret the results	P7U_W, P7S_WG
E.W53	basics of therapy of selected infectious diseases a) antibiotic therapy of selected bacterial infections b) use of antiretroviral drugs in HIV c) treatment of chronic hepatitis B and C d) the use of antiviral drugs in selected clinical situations	P7U_W, P7S_WG
E.W54	indications and rules for performing lumbar puncture and assisting in the performance of the procedure	P7U_W, P7S_WG
E.W55	the indications and rules for performing liver biopsy and assists in performing procedure	P7U_W, P7S_WG

Kod	Treść	PRK
E.W56	understands the symptoms, understands the etiology, treatment rules and is able to establish therapeutic contact with patients with the most common disorders: a) anxiety, somatic and other neurotic forms b) post-traumatic disorders c) personality and behavioral disorders of adults	P7U_W, P7S_WG
E.W57	principles of implementing psychotherapeutic dialog and types of therapeutic interventions	P7U_W, P7S_WG
E.W58	basic psychotherapeutic techniques and principles for combining psychotherapy and pharmacotherapy	P7U_W, P7S_WG

F. Clinical procedural sciences

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
F.W1	the causes, symptoms, diagnostic and therapeutic management principles for the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age, including in particular: 1) acute and chronic abdominal diseases, 2) thoracic diseases, 3) diseases of extremities and head, 4) fractures of bones and injuries to organs	P7U_W, P7S_WG
F.W2	selected issues in the field of pediatric surgery, including traumatology and otorhinolaryngology, as well as acquired defects and diseases being indications for surgical treatment in children	P7U_W, P7S_WG
F.W3	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	P7U_W, P7S_WG
F.W4	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	P7U_W, P7S_WG
F.W5	postoperative treatment with analgesic therapy and postoperative monitoring	P7U_W, P7S_WG
F.W6	indications and rules for the use of intensive care	P7U_W, P7S_WG
F.W7	guidelines for cardiopulmonary resuscitation of newborns, children and adults	P7U_W, P7S_WG
F.W8	principles of functioning of the integrated system National Medical Rescue Service	P7U_W, P7S_WG
F.W9	female reproductive functions, related disorders and diagnostic and therapeutic procedures concerning in particular: 1) the menstrual cycle and its disturbances, 2) pregnancy, 3) physiological and pathological childbirth and postpartum period, 4) genital cancers and inflammations, 5) birth control, 6) menopause, 7) basic diagnostic methods and gynecological procedures	P7U_W, P7S_WG
F.W10	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	P7U_W, P7S_WG
F.W11	issues related to diseases of the visual system, in particular: 1) the causes, symptoms, principles of diagnosis and therapeutic management of the most common ophthalmic diseases, 2) ophthalmic complications of systemic diseases and their ophthalmic symptomatology, and correct methods of dealing with these cases, 3) surgical management of specific eye diseases, 4) the main groups of drugs used in ophthalmology, their adverse reactions and interactions, 5) the groups of generally used medicines with complications and ophthalmic contraindications and their mechanism	P7U_W, P7S_WG

Kod	Treść	PRK
F.W12	issues related to laryngology, phoniatrics and audiology, including 1) causes, clinical course, methods of treatment, complications and prognosis of diseases of the ear, nose, paranasal sinuses, oral cavity, pharynx and larynx, 2) facial nerve disease and selected cervical structures, 3) rules for diagnostic and therapeutic management of mechanical injuries to the ear, nose, larynx and esophagus, 4) rules for emergency management in otorhinolaryngology, in particular in laryngeal dyspnea, 5) principles of diagnostic and therapeutic management of hearing, voice and speech impairments, 6) principles of diagnostic and therapeutic management of head and neck neoplastic diseases	P7U_W, P7S_WG
F.W13	causes, symptoms, principles of diagnosis and therapeutic management in case of the most frequent diseases of the central nervous system in the scope: 1) cerebral edema and its consequences, with particular reference to emergencies, 2) other forms of intracranial tightness with their consequences, 3) craniocerebral injuries, 4) vascular defects of the central nervous system, 5) neoplastic tumors of the central nervous system, 6) diseases of the vertebral column and spinal cord	P7U_W, P7S_WG
F.W14	in the basic scope, the issues of surgical transplantation, indications for transplantation of irreversibly damaged organs and tissues and the procedures related thereto	P7U_W, P7S_WG
F.W15	the principles of suspicion and diagnosis of brain death	P7U_W, P7S_WG
F.W16	procedure in accidental and posttraumatic hypothermia	P7U_W, P7S_WG
F.W17	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age and in particular: a) diseases of arterial and venous vessels b) diseases of the urinary tract c) heart and blood vessel diseases d) craniofacial diseases, acute and chronic diseases of the central nervous system	P7U_W, P7S_WG
F.W18	the most common complications of the procedures listed in F.W2	P7U_W, P7S_WG
F.W19	the most common complications associated with anesthesia, sedation and perioperative period	P7U_W, P7S_WG
F.W20	the rules of qualification, what they consist of, how they take place and what are the possible complications and consequences of surgical procedures: a) removal of appendix, gallbladder b) excision of the thyroid, parathyroid, adrenal glands c) excision of part and entirety of the stomach, large intestine d) abdominal hernias, using synthetic mesh e) surgical treatment of obesity	P7U_W, P7S_WG
F.W21	the qualifications rules, knows what they are, how they work and what are the possible consequences and complications of the following procedures: a) percutaneous and intraductive abdominal organ ultrasonography f) b) endoscopic gastrointestinal diagnostic and therapeutic procedures c) endoscopic diagnostic and respiratory therapeutic procedures (bronchoscopy, endoscopic ultrasound bronchoscopy) d) endoscopic diagnostic and therapeutic procedures for the urinary tract (cystoscopy) e) endoscopic diagnostic and therapeutic procedures for the locomotor system (arthroscopy) f) screening tests used for the early detection of gastrointestinal neoplasms	P7U_W, P7S_WG

G. Law and organizational aspects of medicine

In terms of knowledge, the graduate knows and understands:

Kod	Treść	PRK
G.W1	methods of individual and population health assessment, different systems of disease classification and medical procedures	P7S_WK
G.W2	the identification and testing of risk factors, the advantages and disadvantages of different types of epidemiological studies and measures demonstrating the presence of cause and effect relationships	P7U_W, P7S_WG

Kod	Treść	PRK
G.W3	epidemiology of infectious and chronic diseases, ways of preventing their occurrence at various stages of the natural history of the disease and the role of epidemiological surveillance	P7U_W, P7S_WG
G.W4	the concept of public health, its objectives, tasks and the structure and organization of the health care system at the national and global level, as well as the impact of economic conditions on the health protection options	P7S_WK
G.W5	legal regulations concerning the provision of health services, patient's rights, grounds for practicing the profession of doctor and functioning of medical self-government	P7U_W, P7S_WK
G.W6	basic legal regulations regarding the organization and financing of health care, general health insurance and the principles of organization of units performing medical activities	P7U_W, P7S_WK
G.W7	legal obligations of the doctor concerning pronouncement of death	P7U_W, P7S_WK
G.W8	legal regulations and basic methods of medical experimentation and other medical research, including basic methods of data analysis	P7U_W, P7S_WK
G.W9	legal regulations concerning transplantation, artificial procreation, abortion, aesthetic procedures, palliative treatment, mental illness, etc.	P7U_W, P7S_WK
G.W10	principles of pharmaceutical law	P7U_W, P7S_WK
G.W11	legal regulations concerning medical confidentiality, keeping medical records, criminal, civil and professional liability of a doctor	P7U_W, P7S_WK
G.W12	the concept of violent and sudden death and the difference between the concepts of injury and damage	P7U_W, P7S_WG
G.W13	legal grounds and rules of doctor's conduct during examination of the body at the place of its disclosure and judicial and medical examination of the body	P7U_W, P7S_WK
G.W14	principles of court-medical diagnostics and opinions in cases concerning infanticide and reconstruction of circumstances of a road accident	P7U_W, P7S_WK
G.W15	rules of preparation of opinon of expert witness in criminal matters	P7U_W, P7S_WK
G.W16	principles of judicial and medical opinion on the ability to participate in procedural activities, biological effect and health impairment	P7U_W, P7S_WK
G.W17	the concept of medical error, the most common causes of medical errors and the principle of giving opinions in such cases	P7U_W, P7S_WK
G.W18	principles of material collection for toxicological and hemogenetic tests	P7U_W, P7S_WG
G.W19	situations in which there are conflicts between values and principles relating to the medical profession and the provision of health services, and provide a justification for the decisions taken	P7U_W, P7S_WG
G.W20	legal grounds and rules for conducting judicial and medical autopsy, applying in specific cases additional techniques of autopsy and post-mortem imaging examinations	P7U_W, P7S_WK
G.W21	legal grounds and rules of doctor's conduct during examination of the body at the place of its disclosure and judicial and medical examination of the body	P7U_W, P7S_WK
G.W22	rules for estimating the time of death on the basis of death signs	P7U_W, P7S_WG
G.W23	the importance of environmental xenobiotics, including their exogenous transformation and the role of biomarkers (exposure, effects, vulnerability) in the diagnosis of environmental and occupational diseases	P7U_W, P7S_WG

Umiejętności

Ogólne

In terms of skills, the graduate can:

Kod	Treść	PRK
O.U1	identify medical problems and prioritize medical management	P7U_U, P7S_UW
O.U2	identify life-threatening conditions that require immediate medical intervention	P7U_U, P7S_UW
O.U3	plan the diagnostic procedure and interpret its results	P7U_U, P7S_UW, P7S_UU
O.U4	implement appropriate and safe therapeutic treatment and predict its effects	P7U_U, P7S_UW
O.U5	plan own learning activities and constantly learn in order to update own knowledge	P7U_U, P7S_UW, P7S_UU
O.U6	inspire the learning process of others	P7U_U, P7S_UW
O.U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	P7S_UK
O.U8	communicate and share knowledge with colleagues in a team	P7S_UK
O.U9	critically evaluate the results of scientific research and adequately justify the position	P7U_U, P7S_UW

Szczegółowe

A. Morphological education

In terms of skills, the graduate can:

Kod	Treść	PRK
A.U1	operate an optical microscope, including the use of immersion	P7U_U, P7S_UW
A.U2	recognize histological structures corresponding to organs, tissues, cells and cellular structures in optical or electron microscopy images, describe and interpret their structure and relations between structure and function	P7U_U, P7S_UW
A.U3	explain the anatomical basis of the physical examination	P7U_U, P7S_UW
A.U4	propose relations between anatomical structures on the basis of life-threatening diagnostic tests, in particular in the field of radiology (plain scans, contrast tests, computed tomography and nuclear magnetic resonance imaging)	P7U_U, P7S_UW
A.U5	use anatomical, histological and embryological denominations in speech and writing	P7U_U, P7S_UW

B. Scientific basics of medicine

In terms of skills, the graduate can:

Kod	Treść	PRK
B.U1	use knowledge of the laws of physics to explain the effects of external factors such as temperature, acceleration, pressure, electromagnetic field and ionising radiation on the body and its elements	P7U_U, P7S_UW
B.U2	assess the harmfulness of the dose of ionising radiation and comply with the principles of radiological protection	P7U_U, P7S_UW

Kod	Treść	PRK
B.U3	calculate the molar and percentage concentrations of compounds and the concentrations of substances in isoosmotic, mono- and multicomponent solutions	P7U_U, P7S_UW
B.U4	calculate the solubility of inorganic compounds, determine the chemical background to the solubility or absence of organic compounds and its practical importance for dietetics and therapy	P7U_U, P7S_UW
B.U5	determine the pH of the solution and the effect of changes in pH on inorganic and organic compounds	P7U_U, P7S_UW
B.U6	predict the direction of biochemical processes depending on the energetic state of cells	P7U_U, P7S_UW
B.U7	perform simple functional tests assessing the human body as a stable regulation system (stress tests, exercise tests) and interpret numerical data on basic physiological variables	P7U_U, P7S_UW
B.U8	use basic laboratory techniques such as qualitative analysis, titration, colorimetry, pH-metry, chromatography, electrophoresis of proteins and nucleic acids	P7U_U, P7S_UW
B.U9	operate simple measuring instruments and evaluate the accuracy of measurements made	P7U_U, P7S_UW
B.U10	use databases, including online databases, and search for the necessary information using the available tools	P7U_U, P7S_UW
B.U11	select appropriate statistical tests, conduct basic statistical analyses, use appropriate methods of presenting results, interpret the results of meta-analyses and analyze the probability of survival	P7U_U, P7S_UW
B.U12	explain and prioritize differences between prospective and retrospective, randomized and clinical-control studies, case reports and experimental studies according to the reliability and quality of scientific evidence	P7U_U, P7S_UW
B.U13	plan and perform simple scientific research and interpret its results and draw conclusions	P7U_U, P7S_UW, P7S_UU
B.U14	indicate the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	P7U_U, P7S_UW
B.U15	identify sources of electrical signals in the body	P7U_U, P7S_UW
B.U16	perform a pathophysiological analysis of selected clinical cases according to the PBCA (Problem Based Case Analysis) rule	P7U_U, P7S_UW
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	P7U_U, P7S_UW
B.U18	assess the reliability of the clinical trial	P7U_U, P7S_UW
B.U19	understand the concepts describing the strength of the intervention in the study	P7U_U, P7S_UW
B.U20	understand the concept of meta-analysis and how to present its results	P7U_U, P7S_UW
B.U21	use on-line photo, audio and video libraries	P7U_U, P7S_UW
B.U22	use equipment for the reproduction of three-dimensional video images	P7U_U, P7S_UW
B.U23	use on-line databases of the human genome	P7U_U, P7S_UW
B.U24	use the Internet databases of genetic disorders	P7U_U, P7S_UW
B.U25	use a telemedicine tool for teleconsultation purposes	P7U_U, P7S_UW
B.U26	use various types of computer simulators and e-learning tools for educational purposes, with particular emphasis on virtual patients	P7U_U, P7S_UW

Kod	Treść	PRK
B.U27	use computer simulators to support the medical decision-making process	P7U_U, P7S_UW
B.U28	provide expert knowledge through simple IT techniques of knowledge representation such as a block diagram or a rule database	P7U_U, P7S_UW
B.U29	protect clinical data against unauthorized access	P7U_U, P7S_UW
B.U30	use e-learning platforms	P7U_U, P7S_UW
B.U31	prepare materials for on-line presentations	P7U_U, P7S_UW

C. Preclinical course

In terms of skills, the graduate can:

Kod	Treść	PRK
C.U1	analyze genetic crossbreeds and pedigrees of human traits and diseases, and assess the risk of having a child with chromosome aberrations	P7U_U, P7S_UW
C.U2	identify indications for prenatal testing	P7U_U, P7S_UW
C.U3	make decisions about the need for cytogenetic and molecular tests	P7U_U, P7S_UW
C.U4	perform morphometric measurements, analyze morphograms and record karyotypes of diseases	P7U_U, P7S_UW
C.U5	estimate the risk of a given disease becoming apparent in the offspring based on family predisposition and the influence of environmental factors	P7U_U, P7S_UW
C.U6	assess environmental hazards and use basic methods to detect the presence of harmful (biological and chemical) factors in the biosphere	P7U_U, P7S_UW
C.U7	recognize the most frequent human parasites on the basis of their structure, life cycles and symptoms of illnesses	P7U_U, P7S_UW
C.U8	use the antigen-antibody reaction in current modifications and techniques for the diagnosis of infectious, allergic, autoimmune and neoplastic diseases and blood diseases	P7U_U, P7S_UW
C.U9	prepare preparations and identify pathogens under the microscope	P7U_U, P7S_UW
C.U10	interpret the results of microbiological tests	P7U_U, P7S_UW
C.U11	link images of tissue and organ damage with clinical signs of disease, history and results of laboratory tests	P7U_U, P7S_UW
C.U12	analyze reaction, defense and adaptation phenomena and regulatory disturbances caused by an etiological factor	P7U_U, P7S_UW
C.U13	perform simple pharmacokinetic calculations	P7U_U, P7S_UW
C.U14	select drugs at appropriate doses in order to correct pathological phenomena in the system and in individual organs	P7U_U, P7S_UW
C.U15	design schemes of rational chemotherapy of infections, empirical and targeted ones	P7U_U, P7S_UW
C.U16	prepare records of all forms of prescription medicinal substances	P7U_U, P7S_UW
C.U17	use pharmaceutical guides and databases on medicinal products	P7U_U, P7S_UW
C.U18	assess toxicological hazards in specific age groups and in conditions of hepatic and renal failure, and prevent drug poisoning	P7U_U, P7S_UW
C.U19	interpret the results of toxicological tests	P7U_U, P7S_UW

Kod	Treść	PRK
C.U20	describe the changes in function of the organism in homeostasis disorder, determine its integrated reaction to physical effort, high and law teperature, blood or water loss, sudden verticalization, transition from sleep to wakefulness	P7U_U, P7S_UW

D. Behavioral and social sciences with elements of professionalism

In terms of skills, the graduate can:

Kod	Treść	PRK
D.U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	P7U_U, P7S_UW
D.U2	identify signs of anti-health and self-destructive behavior and respond appropriately to them	P7U_U, P7S_UW
D.U3	choose treatment that minimizes the social consequences for the patient	P7U_U, P7S_UW
D.U4	build an atmosphere of trust throughout the entire diagnostic and treatment process	P7U_U, P7S_UW
D.U5	talk to the adult patient, child and family using active listening and empathy techniques and talk to the patient about his or her life situation	P7U_U, P7S_UW
D.U6	inform the patient about the purpose, course and possible risks of the proposed diagnostic or therapeutic measures, and obtain his or her informed consent to take these measures	P7U_U, P7S_UW
D.U7	involve the patient in the therapeutic process	P7U_U, P7S_UW
D.U8	provide the patient and his or her family with information about unfavorable prognosis	P7U_U, P7S_UW
D.U9	provide advice on therapeutic recommendation compliance and following healthy lifestyle	P7U_U, P7S_UW
D.U10	identify risk factors for violence, recognize violence and respond accordingly	P7U_U, P7S_UW
D.U11	apply basic psychological motivational and supportive interventions	P7U_U, P7S_UW
D.U12	communicate with colleagues with constructive feedback and support	P7U_U, P7S_UW, P7S_UK
D.U13	comply with ethical standards in professional activities	P7U_U, P7S_UW
D.U14	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	P7U_U, P7S_UW
D.U15	follow the patient's rights	P7U_U, P7S_UW
D.U16	show responsibility for improving your qualifications and transferring knowledge to others	P7U_U, P7S_UW
D.U17	critically analyse medical literature, including in English, and draw conclusions	P7U_U, P7S_UW
D.U18	communicate with the patient in one of the foreign languages at B2+ level of the Common European Framework of Reference for Languages	P7U_U, P7S_UW
D.U19	take action to improve the quality of life of patients and prevent it from deteriorating in the future	P7U_U, P7S_UW
D.U20	recognise and apply measures provided for by law when it is necessary to take medical action without consent or with the use of coercion	P7U_U, P7S_UW
D.U21	be able to work in a multiprofessional team, in a multicultural and multinational environment	P7U_U, P7S_UW
D.U22	demonstrate responsibility for one’s own professional development, contribute to the further development of sciences, transfer own knowledge to others	P7U_U, P7S_UW

E. Clinical non-procedural medical disciplines

In terms of skills, the graduate can:

Kod	Treść	PRK
E.U1	carry out a medical history with an adult patient	P7U_U, P7S_UW
E.U2	carry out a medical interview with the child and his or her family	P7U_U, P7S_UW
E.U3	conduct a full and targeted physical examination of an adult patient	P7U_U, P7S_UW
E.U4	carry out a physical examination of a child of all ages	P7U_U, P7S_UW
E.U5	conduct a psychiatric examination	P7U_U, P7S_UW
E.U6	conduct an approximate hearing and field of vision examination, and an otoscopic examination	P7U_U, P7S_UW
E.U7	assess the general condition, state of consciousness and awareness of the patient	P7U_U, P7S_UW
E.U8	assess the condition of the newborn on the Apgar scale and its maturity, and examine neonatal reflexes	P7U_U, P7S_UW
E.U9	compile anthropometric and blood pressure measurements with data on centile grids	P7U_U, P7S_UW
E.U10	assess the degree of advancement of puberty	P7U_U, P7S_UW
E.U11	conduct routine health checks	P7U_U, P7S_UW
E.U12	perform differential diagnosis of the most common diseases of adults and children	P7U_U, P7S_UW
E.U13	evaluate and describe the somatic and mental state of the patient	P7U_U, P7S_UW
E.U14	recognize immediate life-threatening conditions	P7U_U, P7S_UW
E.U15	recognize the condition after drinking alcohol, after using drugs and other substances	P7U_U, P7S_UW
E.U16	plan diagnostic, therapeutic and prophylactic procedures	P7U_U, P7S_UW, P7S_UU
E.U17	analyze the potential adverse reactions of individual medicines and the interactions between them	P7U_U, P7S_UW
E.U18	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	P7U_U, P7S_UW
E.U19	recognize the symptoms of drug dependence and propose treatment	P7U_U, P7S_UW
E.U20	qualify the patient for home and hospital treatment	P7U_U, P7S_UW
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	P7U_U, P7S_UW
E.U22	make a functional assessment of a patient with a disability	P7U_U, P7S_UW
E.U23	propose a rehabilitation program for the most common diseases	P7U_U, P7S_UW
E.U24	interpret the results of laboratory tests and identify the causes of abnormalities	P7U_U, P7S_UW
E.U25	apply nutritional treatment, including enteral and parenteral nutrition	P7U_U, P7S_UW
E.U26	plan the management of exposure to blood-borne infections	P7U_U, P7S_UW
E.U27	qualify the patient for vaccination	P7U_U, P7S_UW
E.U28	collect and retain test material for use in laboratory diagnostics	P7U_U, P7S_UW

Kod	Treść	PRK
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	P7U_U, P7S_UW
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	P7U_U, P7S_UW
E.U31	interpret pharmaceutical characteristics of medicinal products and critically assess advertising materials for medicines	P7U_U, P7S_UW
E.U32	plan specialist consultations	P7U_U, P7S_UW, P7S_UU
E.U33	implement basic treatment for acute poisoning	P7U_U, P7S_UW
E.U34	monitor the condition of a patient poisoned with chemicals or drugs E.U35. assess bedsores and apply appropriate dressings	P7U_U, P7S_UW
E.U35	assess pressure ulcers and use appropriate dressings	P7U_U, P7S_UW
E.U36	proceed in case of injuries (dress or immobilize, dress and suture the wound)	P7U_U, P7S_UW
E.U37	recognize the agony of the patient and determine his death	P7U_U, P7S_UW
E.U38	maintain patient's medical records	P7U_U, P7S_UW
E.U39	assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy	P7U_U, P7S_UW
E.U40	select appropriate physical activity in the developmental period of children and adolescents and propose health training in adulthood, both in health and disease	P7U_U, P7S_UW
E.U41	qualify children and young people for physical education and sports, and adults for appropriate physical activity. Interprets the stress tests	P7U_U, P7S_UW
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	P7U_U, P7S_UW
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	P7U_U, P7S_UW
E.U44	define the concepts of nuclear medicine, radiopharmacy and radioimmunology	P7U_U, P7S_UW
E.U45	describe the physical processes that are the basis for radiopharmaceutical imaging	P7U_U, P7S_UW
E.U46	list radiopharmaceuticals used for scintigraphic diagnostics and PET, indicate indications for various types of diagnostic tests and the principles of interpretation of the obtained images	P7U_U, P7S_UW
E.U47	list the radioactive isotopes used for nuclear medicine therapies and justify their selection, as well as the basic isotope therapies, the indications for radionuclide therapy, how to assess the effectiveness of the therapy, the possible complications following the therapy	P7U_U, P7S_UW

Kod	Treść	PRK
E.U48	identify ways in which the ALARA radiological protection principle can be implemented in practice with regard to nuclear medicine	P7U_U, P7S_UW
E.U49	make smear tests for malaria	P7U_U, P7S_UW
E.U50	negotiate patient referral for psychotherapy and empathic patient support during a crisis	P7U_U, P7S_UW
E.U51	understand the importance and organization of support groups for chronic patients and their families, and Balint groups for medical staff	P7U_U, P7S_UW

F. Clinical procedural sciences

In terms of skills, the graduate can:

Kod	Treść	PRK
F.U1	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	P7U_U, P7S_UW
F.U2	use basic surgical instruments	P7U_U, P7S_UW
F.U3	adhere to the principles of asepsis and antisepsis	P7U_U, P7S_UW
F.U4	manage a simple wound, put on and change a sterile surgical dressing	P7U_U, P7S_UW
F.U5	make a peripheral puncture	P7U_U, P7S_UW
F.U6	examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination	P7U_U, P7S_UW
F.U7	evaluate the result of a radiological examination in the most common types of fractures, particularly long bone fractures	P7U_U, P7S_UW
F.U8	perform temporary immobilization of the limb, choose the type of immobilization necessary for use in typical clinical situations and control the correctness of blood supply to the limb after the insertion of the immobilizing dressing	P7U_U, P7S_UW
F.U9	manage external bleeding	P7U_U, P7S_UW
F.U10	perform basic resuscitation procedures using an automatic external defibrillator and other emergency procedures and first aid	P7U_U, P7S_UW
F.U11	operate according to the algorithm of advanced resuscitation activities	P7U_U, P7S_UW
F.U12	monitor the patient's condition in the post-operative period based on basic vital parameters	P7U_U, P7S_UW
F.U13	recognize subjective and physical symptoms indicating the abnormal course of pregnancy (abnormal bleeding, contractions of the uterus)	P7U_U, P7S_UW
F.U14	interpret the results of physical examination of a pregnant woman (arterial pressure, functioning of the mother's and fetus' heart) and the results of laboratory tests proving the pathologies of pregnancy	P7U_U, P7S_UW
F.U15	interpret the cardiotocography (CTG)	P7U_U, P7S_UW
F.U16	recognize the beginning of labor and its incorrect duration	P7U_U, P7S_UW
F.U17	interpret subjective signs and symptoms during the time of confinement	P7U_U, P7S_UW
F.U18	establish recommendations, indications and contraindications concerning the use of contraceptive methods	P7U_U, P7S_UW
F.U19	perform ophthalmic screening tests	P7U_U, P7S_UW
F.U20	recognize ophthalmologic conditions requiring immediate specialist help and provide preliminary, qualified help in cases of physical and chemical injuries of the eye	P7U_U, P7S_UW

Kod	Treść	PRK
F.U21	evaluate the condition of the unconscious patient according to international scoring scales	P7U_U, P7S_UW
F.U22	recognise the symptoms of increasing intracranial pressure	P7U_U, P7S_UW
F.U23	assess the indications for suprapubic puncture and participate in its performance	P7U_U, P7S_UW
F.U24	assist in typical urological procedures (diagnostic and therapeutic endoscopy of the urinary tract, lithotripsy, prostate puncture)	P7U_U, P7S_UW
F.U25	perform basic laryngological examination of the ear, nose, pharynx and larynx	P7U_U, P7S_UW
F.U26	conduct an approximate hearing test	P7U_U, P7S_UW
F.U27	operate according to a current algorithm for advanced resuscitation activities: a) is able to open the airway using non-instrumented and instrumented techniques endoscopic retrograde cholangiopancreatography) b) is able to ventilate the patient with a self-expanding bag with a face mask c) is able to operate the manual defibrillator safely	P7U_U, P7S_UW
F.U28	can tie a single and surgical knot	P7U_U, P7S_UW
F.U29	can examine the breasts, the abdomen and perform a digital rectal examination	P7U_U, P7S_UW
F.U30	can perform and interpret FAST ultrasound (Focused Assessment with Sonography for Trauma)	P7U_U, P7S_UW
F.U31	insert a drain into the pleural cavity and connect the set for an active pleural drain	P7U_U, P7S_UW
F.U32	insert a catheter into the bladder	P7U_U, P7S_UW
F.U33	to take the informed and legally effective consent: a) for high-risk diagnostic procedures (e.g. gastroscopy, colonoscopy), endoscopic retrograde cholangiopancreatography) b) for high-risk diagnostic procedures (transcutaneous biopsy under control) USG) c) surgery to remove the gallbladder	P7U_U, P7S_UW
F.U34	to pass on information about the death of a close friend and relative	P7U_U, P7S_UW
F.U35	provide family with information on the possibility of organ transplantation of the person who was diagnosed with brain death	P7U_U, P7S_UW
F.U36	identify and indicate methods of management of traumatic peripheral nerve damage	P7U_U, P7S_UW

G. Law and organizational aspects of medicine

In terms of skills, the graduate can:

Kod	Treść	PRK
G.U1	describe the demographic structure of the population, and based on that assess the health problems of the population	P7U_U, P7S_UW
G.U2	collect information on the presence of risk factors for communicable and chronic diseases and plan prevention activities at different levels of prevention	P7U_U, P7S_UW, P7S_UU
G.U3	interpret the measures of the incidence of diseases and disabilities	P7U_U, P7S_UW
G.U4	assess the epidemiological situation of diseases commonly found in the Republic of Poland and in the world	P7U_U, P7S_UW
G.U5	explain basic rights and the legal basis for the provision of medical services to recipients of medical services	P7U_U, P7S_UW
G.U6	apply legal regulations regarding the issue of medical certificates for the needs of patients, their families and other entities	P7U_U, P7S_UW
G.U7	recognise the behaviors and symptoms indicating the possibility of violence against the child during the examination of the child	P7U_U, P7S_UW

Kod	Treść	PRK
G.U8	act in a manner that avoids medical errors	P7U_U, P7S_UW
G.U9	take blood for toxicological tests and protect the material for hemogenetic tests	P7U_U, P7S_UW
G.U10	cooperate with other professions in the field of health protection	P7U_U, P7S_UW
G.U11	identify the relevant legislation containing standards for the provision of health services and the medical profession	P7U_U, P7S_UW
G.U12	when providing emergency aid, make efforts not to destroy important forensic evidence which does not interfere with the primary objective of medical intervention (saving lives / health)	P7U_U, P7S_UW
G.U13	conducts community interview, is able to interpret levels of pollution in the aspect of effective standards, and is able to identify organs and systems susceptible to harmful substances, the performance of individual xenobiotics present in the environment and the working environment	P7U_U, P7S_UW

Kompetencje społeczne

Ogólne

Within the scope of competence, the graduate is ready to:

Kod	Treść	PRK
O.K1	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures	P7S_KK, P7S_KO, P7S_KR
O.K2	to be guided by the well-being of a patient	P7S_KK
O.K3	respect medical confidentiality and patients' rights	P7S_KK, P7S_KR
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	P7S_KK
O.K5	perceive and recognize own limitations and self-assessing educational deficits and needs	P7S_KK, P7S_KR
O.K6	promote health-promoting behaviors	P7U_K, P7S_KK, P7S_KO
O.K7	use objective sources of information	P7S_KK
O.K8	formulate conclusions from own measurements or observations	P7S_KR
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	P7U_K, P7S_KK, P7S_KO
O.K10	formulate opinions on the various aspects of the professional activity	P7S_KK, P7S_KR
O.K11	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	P7U_K, P7S_KR

Plany studiów

Semestr 1

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Physical Education	A	classes: 30	-	-	O	Os
Anatomy with Embryology	A	e-learning: 22 dissection classes: 69 seminar: 3	-	-	O	Os
Biochemistry with Elements of Chemistry	B	e-learning: 24 laboratory: 23 seminar: 12	-	-	O	Or
Physiology	B	e-learning: 65 laboratory: 23	-	-	O	Os
Histology with Cytophysiology	A	laboratory: 36 e-learning: 24	-	-	O	Os
History of Medicine	D	e-learning: 24 seminar: 1	2,0	examination	O	Os
First Aid	F	e-learning: 10 classes: 20	2,0	credit	O	Or
Medical Polish	D	foreign language course: 60	-	-	O	Or
Health and Safety		Health and Safety training: 5	-	credit	O	Os

Semestr 2

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Physical Education	A	classes: 30	-	credit	O	Os
Anatomy with Embryology	A	e-learning: 22 dissection classes: 69 seminar: 3	13,0	examination	O	Os
Biochemistry with Elements of Chemistry	B	e-learning: 18 laboratory: 19 seminar: 20	10,0	credit	O	Or
Ethics in Medicine	D	seminar: 30	2,0	graded credit	O	Os
Physiology	B	e-learning: 65 laboratory: 22	12,0	examination	O	Os
Genetics with Molecular Biology	B, C	e-learning: 22 laboratory: 2 seminar: 6	2,0	graded credit	O	Os
Histology with Cytophysiology	A	laboratory: 28 e-learning: 20	11,0	examination	O	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
First Aid	F	e-learning: 10 classes: 20	2,0	credit	O	Or
Medical Polish	D	foreign language course: 60	5,0	credit	O	Or
Patient Care - summer clerkship	I	professional practice: 120	4,0	credit	O	Os

It is necessary to choose 1 elective subject from each group – total 5 electives (one during 2nd year, two during 3rd year and two during 5th year).

Semestr 3

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Biochemistry with Elements of Chemistry	B	e-learning: 34 laboratory: 12 seminar: 28	6,0	examination	O	Os
Medical Polish	D	foreign language course: 60	-	-	O	Or
Laboratory Diagnostics	E	e-learning: 4 seminar: 12 classes: 24	2,0	credit	O	Or
Laboratory Training of Clinical Skills	D	simulations: 39	2,0	credit	O	Or
Pathology	C	dissection classes: 4 e-learning: 15 seminar: 38 classes: 54	-	-	O	Os
Medical Psychology	D	seminar: 45	2,0	graded credit	O	Os
Medical Sociology	D	seminar: 30	2,0	graded credit	O	Os
Introduction to Clinical Scinces	B, D	e-learning: 3 classes: 63	3,0	graded credit	O	Os
HUMANITIES IN MEDICINE	D				O	Os
Philosophy and ethics of human sexuality	D	seminar: 30	3,0	graded credit	F	Os
Philosophy of Medicine	D	seminar: 30	3,0	graded credit	F	Os
The main problems of human philosophy	D	seminar: 30	3,0	graded credit	F	Os
Medicine of the Third Reich	D	e-learning: 30	3,0	graded credit	F	Os
Neuroethics	D	seminar: 30	3,0	graded credit	F	Os
Crossing the limits of humanity - Ethics towards the scientific challenges of progress in medicine	D	seminar: 30	3,0	graded credit	F	Os
Introduction to the philosophy of science	D	seminar: 30	3,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Neurodegeneration, diseases in art and famous forgers	D	seminar: 15 e-learning: 15	3,0	graded credit	F	Os
History of Philosophy	D	seminar: 30	3,0	graded credit	F	Os

Semestr 4

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
First Aid	F	seminar: 6 classes: 24	2,0	graded credit	O	Os
Medical Biophysics	B	laboratory: 28 seminar: 10 e-learning: 10	3,0	examination	O	Os
Pharmacology	C	e-learning: 25 seminar: 25	4,0	credit	O	Or
Hygiene	G	seminar: 20	1,0	graded credit	O	Os
Medical Polish	D	foreign language course: 30	4,0	credit	O	Or
Microbiology with Parasitology and Immunology	C	e-learning: 37 laboratory: 27 seminar: 16	6,0	examination	O	Os
Pathology	C	e-learning: 14 dissection classes: 4 seminar: 38 classes: 54	15,0	examination	O	Os
Telemedicine with Elements of Medical Simulation	B	classes: 30	2,0	graded credit	O	Os
Primary Care - summer clerkship	I	professional practice: 90	3,0	credit	O	Os
Emergency Medicine - summer clerkship	I	professional practice: 30	1,0	credit	O	Os
HUMANITIES IN MEDICINE	D				O	Os
Philosophy and ethics of human sexuality	D	seminar: 30	3,0	graded credit	F	Os
Philosophy of Medicine	D	seminar: 30	3,0	graded credit	F	Os
The main problems of human philosophy	D	seminar: 30	3,0	graded credit	F	Os
Medicine of the Third Reich	D	e-learning: 30	3,0	graded credit	F	Os
Neuroethics	D	seminar: 30	3,0	graded credit	F	Os
Crossing the limits of humanity - Ethics towards the scientific challenges of progress in medicine	D	seminar: 30	3,0	graded credit	F	Os
Introduction to the philosophy of science	D	seminar: 30	3,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Neurodegeneration, diseases in art and famous forgers	D	seminar: 15 e-learning: 15	3,0	graded credit	F	Os
History of Philosophy	D	seminar: 30	3,0	graded credit	F	Os

It is necessary to choose 1 elective subject from each group – total 5 electives (one during 2nd year, two during 3rd year and two during 5th year)

Semestr 5

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Surgery	C, B, A, F	e-learning: 34 seminar: 35 classes: 57	7,0	credit	O	Or
Internal Medicine	E	seminar: 52 classes: 78	7,0	credit	O	Or
Dermatology and Venerology	E	seminar: 30 classes: 28	3,0	examination	O	Os
Laboratory Diagnostics	E	e-learning: 6 seminar: 20	2,0	examination	O	Os
Epidemiology	G	seminar: 25	2,0	graded credit	O	Os
Pharmacology	C	e-learning: 23 seminar: 22	-	-	O	Os
Obstetrics and Gynecology	F	seminar: 20 classes: 20	3,0	credit	O	Or
Medical Polish	D	foreign language course: 60	-	-	O	Or
Laboratory Training of Clinical Skills	E, F	e-learning: 12 classes: 18	2,0	credit	O	Or
Pediatrics	E, C	seminar: 68 classes: 66	7,0	credit	O	Or
Psychiatry	E	seminar: 20	1,0	credit	O	Or
Radiology and Basis of Ultrasonography	F	e-learning: 8 seminar: 57 classes: 11	4,0	examination	O	Os
PRECLINICAL SCIENCES	C				O	Os
Potable water and health	C	seminar: 30	2,0	graded credit	F	Os
Biostatistics	C	seminar: 10 classes: 20	2,0	graded credit	F	Os
Medicine in "OMICS"	C	seminar: 15 classes: 15	2,0	graded credit	F	Os
Practical aspects of diagnostics of genetically determined diseases	C	seminar: 10 classes: 20	2,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Trends in nutrition of healthy people	C	seminar: 30	2,0	graded credit	F	Os
Diet-sensitive genes - e-learning course	C	lecture: 30	2,0	graded credit	F	Os
Behavioral and Social Sciences with Elements of Professionalism	D				O	Os
Research ethics involving human in medicine	D	seminar: 30	2,0	graded credit	F	Os
Philosophy and ethics of public health	D	seminar: 30	2,0	graded credit	F	Os
Limit problems of human existence: suicide, assisted suicide, euthanasia	D	seminar: 30	2,0	graded credit	F	Os
Cultural psychology in the context of health and illness issues.	D	seminar: 30	2,0	graded credit	F	Os
Body’s circadian rhythm in health and diseases	D	seminar: 30	2,0	graded credit	F	Os
Business plan and marketing communication	D	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Management and decision making	D	seminar: 20 classes: 10	2,0	graded credit	F	Os
Medical Writing	D	e-learning: 15 seminar: 15	2,0	graded credit	F	Os
Disability and independent living. The social dimension.	D	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Ethical aspects of interpersonal communication in medicine	D	e-learning: 10 seminar: 20	2,0	graded credit	F	Os

Semestr 6

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Surgery	C, B, F, A	classes: 57 e-learning: 34 seminar: 35	7,0	credit	O	Or
Internal Medicine	E	seminar: 52 classes: 78	7,0	credit	O	Or
Dermatology and Venerology	E	seminar: 30 classes: 28	3,0	examination	O	Os
Laboratory Diagnostics	E	e-learning: 6 seminar: 20	2,0	examination	O	Os
Epidemiology	G	seminar: 25	2,0	graded credit	O	Os
Pharmacology	C	e-learning: 22 seminar: 23	9,0	examination	O	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Obstetrics and Gynecology	F	seminar: 20 classes: 20	3,0	credit	O	Or
Medical Polish	D	foreign language course: 60	5,0	credit	O	Or
Laboratory Training of Clinical Skills	F, E	e-learning: 12 classes: 18	2,0	credit	O	Or
Pediatrics	C, E	seminar: 68 classes: 66	7,0	credit	O	Or
Psychiatry	E	seminar: 20	1,0	credit	O	Or
Radiology and Basis of Ultrasonography	F	classes: 11 seminar: 57 e-learning: 8	4,0	examination	O	Os
Internal Medicine - summer clerkship	I	professional practice: 120	4,0	credit	O	Os
PRECLINICAL SCIENCES	C				O	Os
Potable water and health	C	seminar: 30	2,0	graded credit	F	Os
Biostatistics	C	seminar: 10 classes: 20	2,0	graded credit	F	Os
Medicine in "OMICS"	C	seminar: 15 classes: 15	2,0	graded credit	F	Os
Practical aspects of diagnostics of genetically determined diseases	C	seminar: 10 classes: 20	2,0	graded credit	F	Os
Trends in nutrition of healthy people	C	seminar: 30	2,0	graded credit	F	Os
Diet-sensitive genes - e-learning course	C	e-learning: 30	2,0	graded credit	F	Os
Behavioral and Social Sciences with Elements of Professionalism	D				O	Os
Research ethics involving human in medicine	D	seminar: 30	2,0	graded credit	F	Os
Philosophy and ethics of public health	D	seminar: 30	2,0	graded credit	F	Os
Limit problems of human existence: suicide, assisted suicide, euthanasia	D	seminar: 30	2,0	graded credit	F	Os
Cultural psychology in the context of health and illness issues.	D	seminar: 30	2,0	graded credit	F	Os
Body’s circadian rhythm in health and diseases	D	seminar: 30	2,0	graded credit	F	Os
Business plan and marketing communication	D	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Management and decision making	D	seminar: 20 classes: 10	2,0	graded credit	F	Os
Medical Writing	D	e-learning: 15 seminar: 15	2,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Disability and independent living. The social dimension.	D	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Ethical aspects of interpersonal communication in medicine	D	e-learning: 10 seminar: 20	2,0	graded credit	F	Os

Semestr 7

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Anesthesiology and Intensive Care	F	seminar: 13 classes: 15	3,0	credit	O	Or
Surgery	F	e-learning: 24 simulations: 12 seminar: 8 classes: 44	5,0	credit	O	Or
Internal Medicine	E, B, C	e-learning: 2 seminar: 42 classes: 61	8,0	credit	O	Or
Clinical Genetics	E	e-learning: 24	2,0	graded credit	O	Os
Obstetrics and Gynecology	F, B	seminar: 20 classes: 20	3,0	credit	O	Or
Clinical Immunology	E	seminar: 10 classes: 8	1,0	examination	O	Os
Evidence-Based Medicine	D	seminar: 27 classes: 9	2,0	examination	O	Os
Otorhinolaryngology	F	seminar: 10 classes: 40	3,0	examination	O	Os
Nuclear Medicine	E	seminar: 12	1,0	graded credit	O	Os
Occupational Medicine	E	classes: 4 seminar: 8 e-learning: 6	1,0	graded credit	O	Os
Family Medicine	E	e-learning: 18 seminar: 17 classes: 15	3,0	credit	O	Or
Neurology	E, C	e-learning: 10 seminar: 34 classes: 46	7,0	examination	O	Os
Ophthalmology	F	e-learning: 20 classes: 40	4,0	examination	O	Os
Pediatrics	E	seminar: 26 classes: 32	4,0	credit	O	Or
Medical Law and Medical Deontology	G	seminar: 25	2,0	graded credit	O	Os
Propedeutics of Dentistry	F	seminar: 15	1,0	graded credit	O	Os
Psychotherapy	E	seminar: 6 classes: 14	1,0	graded credit	O	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Public Health	G	seminar: 15	1,0	graded credit	O	Os
Medical Polish	D	foreign language course: 30	-	-	O	Os

Semestr 8

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Anesthesiology and Intensive Care	F	seminar: 13 classes: 15	3,0	credit	O	Or
Surgery	F	e-learning: 24 simulations: 12 seminar: 8 classes: 44	5,0	credit	O	Or
Internal Medicine	E, B, C	e-learning: 2 seminar: 42 classes: 61	8,0	credit	O	Or
Clinical Genetics	E	e-learning: 24	2,0	graded credit	O	Os
Obstetrics and Gynecology	F, B	seminar: 20 classes: 20	3,0	credit	O	Or
Clinical Immunology	E	seminar: 10 classes: 8	1,0	examination	O	Os
Evidence-Based Medicine	D	seminar: 27 classes: 9	2,0	examination	O	Os
Laboratory Training of Clinical Skills	E, F	classes: 32	1,0	credit	O	Or
Otorhinolaryngology	F	seminar: 10 classes: 40	3,0	examination	O	Os
Nuclear Medicine	E	seminar: 12	1,0	graded credit	O	Os
Occupational Medicine	E	e-learning: 6 seminar: 8 classes: 4	1,0	graded credit	O	Os
Family Medicine	E	e-learning: 18 seminar: 17 classes: 15	3,0	credit	O	Or
Neurology	E, C	e-learning: 10 seminar: 34 classes: 46	7,0	examination	O	Os
Ophthalmology	F	e-learning: 20 classes: 40	4,0	examination	O	Os
Pediatrics	E	seminar: 26 classes: 32	4,0	credit	O	Or
Medical Law and Medical Deontology	G	seminar: 25	2,0	graded credit	O	Os
Propedeutics of Dentistry	F	seminar: 15	1,0	graded credit	O	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Psychotherapy	E	seminar: 6 classes: 14	1,0	graded credit	O	Os
Public Health	G	seminar: 15	1,0	graded credit	O	Os
Medical Polish	D	foreign language course: 30	4,0	examination	O	Os
Surgery - summer clerkship	I	professional practice: 60	2,0	credit	O	Os
Pediatrics - summer clerkship	I	professional practice: 60	2,0	credit	O	Os

Semestr 9

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Anesthesiology and Intensive Care	F, B, C	e-learning: 8 seminar: 8 classes: 19	2,0	examination	O	Os
Surgery	F, B, C	e-learning: 6 seminar: 33 classes: 42	5,0	credit	O	Or
Internal Medicine	E, C	seminar: 35 classes: 77	7,0	credit	O	Or
Clinical Pharmacology	E	seminar: 12	1,0	graded credit	O	Os
Infectious Diseases	E, C	e-learning: 26 seminar: 27 classes: 17	4,0	examination	O	Os
Geriatrics and Palliative Medicine	E, B	seminar: 25 classes: 25	3,0	examination	O	Os
Obstetrics and Gynecology	F, C	seminar: 45 classes: 35	4,0	credit	O	Or
Laboratory Training of Clinical Skills	E, F	simulations: 22 e-learning: 22	1,0	graded credit	O	Os
Emergency Medicine	F	e-learning: 4 simulations: 25	2,0	credit	O	Or
Forensic Medicine	G	e-learning: 8 seminar: 32 classes: 10	3,0	examination	O	Os
Oncology and Hematology	E	e-learning: 6 seminar: 18 classes: 32	3,0	graded credit	O	Os
Orthopedics and Traumatology	F	e-learning: 7 seminar: 25 classes: 25	4,0	examination	O	Os
Pediatrics	E, C	simulations: 18 seminar: 39 classes: 35	6,0	credit	O	Or

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Psychiatry	E	e-learning: 20 classes: 55	5,0	credit	O	Or
Rehabilitation	F	e-learning: 2 seminar: 2 classes: 13	1,0	graded credit	O	Os
Workshop of Clinical Psychological Skills	D	simulations: 20	1,0	graded credit	O	Os
NON-SURGICAL SCIENCES	E				O	Os
Mental disorders in children and adolescents. Diagnosis and treatment.	E	seminar: 30	2,0	graded credit	F	Os
Self-inflicted injury and suicidal behavior among children and adolescents	E	seminar: 30	2,0	graded credit	F	Os
Why teenagers scare their parents?	E	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Foundations of psychoanalysis	E	seminar: 16 classes: 14	2,0	graded credit	F	Os
Clinical Immunology as modern interdisciplinary science	E	seminar: 14 classes: 16	2,0	graded credit	F	Os
How to survive in emergency care - what the doctor should know	E	seminar: 30	2,0	graded credit	F	Os
Heart failure: prevention, diagnostics and treatment	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Advanced technologies in treatment of diabetes	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
From symptoms to diagnosis - topographic diagnostics in Neurology	E	seminar: 30	2,0	graded credit	F	Os
Practice of echocardiography	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
The role of genetics in modern prenatal diagnosis and in reproduction failure	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Systemic vasculitis	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Ultrasound in pediatrics	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
From conservative nephrology to transplantology	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Emergency in allergology and clinical immunology	E	classes: 17 seminar: 13	2,0	graded credit	F	Os
Nervous system diseases in children and neurophysiology methods in diagnostics	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
SURGICAL CLINICAL SCIENCES	F				O	Os
Advanced Life Support	F	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Practical aspects of surgery in children	F	e-learning: 6 seminar: 8 classes: 16	2,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Treatment of cancer of the abdominal cavity in elderly people	F	e-learning: 4 seminar: 6 classes: 20	2,0	graded credit	F	Os
Videoscope technique in surgical fields	F	seminar: 10 classes: 20	2,0	graded credit	F	Os
Minimally invasive techniques in urology	F	classes: 20 seminar: 10	2,0	graded credit	F	Os

Semestr 10

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Anesthesiology and Intensive Care	F, B, C	e-learning: 8 seminar: 8 classes: 19	2,0	examination	O	Os
Surgery	F, B, C	e-learning: 6 seminar: 33 classes: 42	5,0	credit	O	Or
Internal Medicine	E, C	seminar: 35 classes: 77	7,0	credit	O	Or
Clinical Pharmacology	E	seminar: 12	1,0	graded credit	O	Os
Infectious Diseases	E, C	e-learning: 26 seminar: 27 classes: 17	4,0	examination	O	Os
Geriatrics and Palliative Medicine	E, B	seminar: 25 classes: 25	3,0	examination	O	Os
Obstetrics and Gynecology	F, C	seminar: 45 classes: 35	4,0	credit	O	Or
Laboratory Training of Clinical Skills	E, F	simulations: 22 e-learning: 22	1,0	graded credit	O	Os
Emergency Medicine	F	e-learning: 4 simulations: 25	2,0	credit	O	Or
Forensic Medicine	G	e-learning: 8 seminar: 32 classes: 10	3,0	examination	O	Os
Oncology and Hematology	E	e-learning: 6 seminar: 18 classes: 32	3,0	graded credit	O	Os
Orthopedics and Traumatology	F	e-learning: 7 seminar: 25 classes: 25	4,0	examination	O	Os
Pediatrics	E, C	simulations: 18 seminar: 39 classes: 35	6,0	credit	O	Or
Psychiatry	E	e-learning: 20 classes: 55	5,0	credit	O	Or

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Rehabilitation	F	e-learning: 2 seminar: 2 classes: 13	1,0	graded credit	O	Os
Workshop of Clinical Psychological Skills	D	simulations: 20	1,0	graded credit	O	Os
Anesthesiology and Intensive Care - summer clerkship	I	professional practice: 60	2,0	credit	O	Os
Obstetrics and Gynecology - summer clerkship	I	professional practice: 60	2,0	credit	O	Os
NON-SURGICAL SCIENCES	E				O	Os
Mental disorders in children and adolescents. Diagnosis and treatment.	E	seminar: 30	2,0	graded credit	F	Os
Self-inflicted injury and suicidal behavior among children and adolescents	E	seminar: 30	2,0	graded credit	F	Os
Why teenagers scare their parents?	E	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Foundations of psychoanalysis	E	seminar: 16 classes: 14	2,0	graded credit	F	Os
Clinical Immunology as modern interdisciplinary science	E	seminar: 14 classes: 16	2,0	graded credit	F	Os
How to survive in emergency care - what the doctor should know	E	seminar: 30	2,0	graded credit	F	Os
Heart failure: prevention, diagnostics and treatment	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Advanced technologies in treatment of diabetes	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
From symptoms to diagnosis - topographic diagnostics in Neurology	E	seminar: 30	2,0	graded credit	F	Os
Practice of echocardiography	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
The role of genetics in modern prenatal diagnosis and in reproduction failure	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Systemic vasculitis	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Ultrasound in pediatrics	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
From conservative nephrology to transplantology	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Nervous system diseases in children and neurophysiology methods in diagnostics	E	seminar: 10 classes: 20	2,0	graded credit	F	Os
Emergency in allergology and clinical immunology	E	classes: 17 seminar: 13	2,0	graded credit	F	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
SURGICAL CLINICAL SCIENCES	F				O	Os
Advanced Life Support	F	e-learning: 10 classes: 20	2,0	graded credit	F	Os
Practical aspects of surgery in children	F	e-learning: 6 seminar: 8 classes: 16	2,0	graded credit	F	Os
Videoscope technique in surgical fields	F	seminar: 10 classes: 20	2,0	graded credit	F	Os
Treatment of cancer of the abdominal cavity in elderly people	F	e-learning: 4 seminar: 6 classes: 20	2,0	graded credit	F	Os
Minimally invasive techniques in urology	F	classes: 20 seminar: 10	2,0	graded credit	F	Os

Semestr 11

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Surgery	H	clinical classes: 120	8,0	examination	O	Os
Internal Medicine	H	clinical classes: 240	16,0	examination	O	Os
Obstetrics and Gynecology	H	clinical classes: 60	4,0	examination	O	Os
Pediatrics	H	simulations: 6 clinical classes: 114	8,0	examination	O	Os
Psychiatry	H	clinical classes: 60	4,0	examination	O	Os
Emergency Medicine	H	simulations: 6 clinical classes: 54	4,0	examination	O	Os
Family Medicine	H	clinical classes: 60	4,0	examination	O	Os
Clinical Science Electives	H	clinical classes: 180	12,0	credit	O	Os

Semestr 12

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Surgery	H	clinical classes: 120	8,0	examination	O	Os
Internal Medicine	H	clinical classes: 240	16,0	examination	O	Os
Obstetrics and Gynecology	H	clinical classes: 60	4,0	examination	O	Os
Pediatrics	H	simulations: 6 clinical classes: 114	8,0	examination	O	Os
Psychiatry	H	clinical classes: 60	4,0	examination	O	Os
Emergency Medicine	H	simulations: 6 clinical classes: 54	4,0	examination	O	Os

Przedmiot	Grupa standardu	Liczba godzin	Punkty ECTS	Forma weryfikacji		
Family Medicine	H	clinical classes: 60	4,0	examination	O	Os
Clinical Science Electives	H	clinical classes: 180	12,0	credit	O	Os

O - obowiązkowy
F - fakultatywny
Or - obowiązkowy do zaliczenia roku
Os - obowiązkowy do zaliczenia w toku studiów

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Physical Education

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification No ISCED cat. found	**Standard group** A. Morphological education

Period	**Examination**	**Number of ECTS points**
Semester 1	- **Activities and hours** classes: 30	0.0

Period	**Examination**	**Number of ECTS points**
Semester 2	credit **Activities and hours** classes: 30	0.0

Goals

C1	Universal physical development of the body. Education, improvement and keeping of basic motor skills, such as strength, endurance, quickness and motor coordination.
C2	Development of an attitude of conscious and permanent participation in various forms of sports and recreational activities in the course of education and upon its completion for the purpose of keeping physical and mental health.
C3	Development of personality attitudes: self-esteem, respect to others, especially those weaker and with lesser abilities.
C4	Learning to cooperate in a team, group, self-acceptance and acceptance of others, the culture of sports fan support, the following of the “fair play” rule in sports and in life.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	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	classroom observation
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	practical test
Social competences – Student is ready to:			
K1	promote health-promoting behaviors	O.K6	classroom observation

Calculation of ECTS points

Semester 1

Activity form	Activity hours*
classes	30

Student workload	**Hours** 30
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Semester 2

Activity form	Activity hours*

classes	30

Student workload	**Hours** 30
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Discussion of the rules of occupational health and safety during physical education classes. Learning about the conditions of passing the subject, the regulations of the Physical Education and Sports Department at the Jagiellonian University Medical College and rules of using an external complex of sports facilities.	W1, U1, K1	classes
2.	Learning about basic technical and tactical elements of team games; - Volleyball: volleyball player's attitude, overhand pass and forearm pass, tennis serve, bump and forearm hitting, ball setting forward and backward, attack, block, playing.	W1, U1, K1	classes
3.	Learning about basic technical and tactical elements of team games; Basketball: moving around the field, passes and grips, dribbling with a right hand and left hand, shot while running from the right or left, set shot, 1:1 defence, feints with or without a ball, half-court offence and fast break, playing.	W1, U1, K1	classes
4.	Various forms of physical activity of adults accompanied by music – aerobics as a form of monostructural exercises; exercises to strengthen and shape arm, back, stomach and leg muscles. Dance aerobics: use of basic steps like step, touch, double step out, heel back, knee up, grapevine, V step, A step, forming choreography.	W1, U1, K1	classes
5.	Fitness: exercises on step platforms, forming choreography.	W1, U1, K1	classes
6.	Fitness: exercises with balls - ball exercising technique, correct performance exercising.	W1, U1, K1	classes
7.	Fitness: TBC - Total Body Conditioning, body shaping; ABT – abdominal, buttocks, thighs.	W1, U1, K1	classes
8.	Fitness: exercises with weights and barbells.	W1, U1, K1	classes
9.	Fitness: stretching exercises with elements of yoga, callanetics and stretching.	W1, U1, K1	classes

10.	Gym: strengthening all muscle groups on weight training and aerobic training equipment; cardio workout: bicycles, elliptical trainers, treadmills, indoor rowers; weight lifting: multigym, gym benches with racks for weights, decline benches, indoor rowers, dumbbell set.	W1, U1, K1	classes
11.	Table tennis: posture at the table and movements during the game, ways to hold the racket, forehand, backhand, serve, attack, defence, indirect shot, playing.	W1, U1, K1	classes
12.	Gym: strengthening all muscle groups on weight training and aerobic training equipment; cardio workout: bicycles, elliptical trainers, treadmills, indoor rowers; weight lifting: multigym, gym benches with racks for weights, decline benches, indoor rowers, dumbbell set.	W1, U1, K1	classes
13.	Therapeutic gymnastics: exercises strengthening postural muscles, upper and lower limbs, torso and deep muscles. The use of isometric exercises, balance exercises, stretching, disease-related exercises, exercises with equipment and relaxation. Exercises in isolated positions, the role of proper breathing during exercises.	W1, U1, K1	classes
14.	Floorball: moving on the pitch, forehand and backhand pass, receiving the ball, shot on goal from the spot and in motion, dribbling, feints, defense, goalkeeping.	W1, U1, K1	classes
15.	Nordic Walking: selection and adjustment of the length of poles to height, RR and NN technique, technique of walking in flat terrain, uphill and downhill, general development exercises with the use of poles, selection of distance and pace of walking.	W1, U1, K1	classes

Course advanced

Semester 1

Teaching methods:

classes / practicals, demonstration, presentation, group work, practical classes

Activities	Examination methods	Credit conditions
classes	classroom observation	Attendence at all 15 classes in a semester are obligatory.

Semester 2

Teaching methods:

classes / practicals, demonstration, presentation, group work, practical classes

Activities	Examination methods	Credit conditions
classes	practical test	Attendence at all 15 classes in a semester are obligatory.

Entry requirements

No medical contraindications to active participation in physical education classes provided for in the curriculum. Basic fitness. Attendence at all 15 classes in a semester are obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Anatomy with Embryology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** A. Morphological education
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 1	- **Activities and hours** e-learning: 22, seminar: 3, dissection classes: 69	0.0

Period	**Examination**	**Number of ECTS points**
Semester 2	examination **Activities and hours** e-learning: 22, seminar: 3, dissection classes: 69	13.0

Goals

C1	To familiaraze students with the structure of the human body in terms of topography, functional and clinical anatomy.
C2	To present students structures of the human body in terms of topography, functional and clinical anatomy and basics of the diagnostic.
C3	To make students aware of the anatomical terms in clinical aspect.

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	written examination, theoretical colloquiums, classroom observation, test
W2	anatomical, histological and embryological denominations in Polish and English	A.W1	written examination, theoretical colloquiums, classroom observation, test
W3	structure of human body in topographic (upper and lower extremities, thorax, abdomen, pelvis, back, neck, head) and functional (osteoarticular system, muscular system, circulatory system, respiratory system, digestive system, urinary system, genital system, nervous system and sensory organs, integuments) approaches	A.W2	written examination, theoretical colloquiums, classroom observation, test
W4	topographical relations between individual organs	A.W3	written examination, theoretical colloquiums, classroom observation, test
W5	stages of development of the human embryo, the structure and function of the membranes and placenta, stages of development of individual organs and the influence of harmful factors on the development of the embryo and fetus (teratogenic)	A.W6	written examination, theoretical colloquiums, classroom observation, test
Skills – Student can:			
U1	explain the anatomical basis of the physical examination	A.U3	written examination, theoretical colloquiums, classroom observation, test
U2	propose relations between anatomical structures on the basis of life-threatening diagnostic tests, in particular in the field of radiology (plain scans, contrast tests, computed tomography and nuclear magnetic resonance imaging)	A.U4	written examination, theoretical colloquiums, classroom observation, test
U3	use anatomical, histological and embryological denominations in speech and writing	A.U5	written examination, theoretical colloquiums, classroom observation, test
Social competences – Student is ready to:			
K1	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
K2	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation
K3	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

K4	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K5	use objective sources of information	O.K7	classroom observation

Calculation of ECTS points

Semester 1

Activity form	Activity hours*
e-learning	22
seminar	3
dissection classes	69
preparation for classes	10
preparation for examination	40
preparation for colloquium	10
preparation for classes	10
kształcenie samodzielne	37

Student workload	**Hours** 201
Workload involving teacher	**Hours** 94
Practical workload	**Hours** 69

* hour means 45 minutes

Semester 2

Activity form	Activity hours*
e-learning	22
seminar	3
dissection classes	69
preparation for examination	35
preparation for classes	10
preparation for colloquium	15

kształcenie samodzielne	35
Student workload	**Hours** 189
Workload involving teacher	**Hours** 94
Practical workload	**Hours** 69

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities

1.	Anatomical terms related to position & movement. Connective tissue: general structure of the bone. Biological & mechanical properties of bones. Classification of bones. Joints: fibrous, cartilaginous & synovial joints. General structure of synovial joint - types of synovial joints. Vertebral column. General characteristics of a vertebra. Cervical, thoracic, lumbar vertebrae. Sacrum, coccyx. Intervertebral disc. Joints of vertebral column. Atlanto-occipital joints. Atlantoaxial joints. Curves of vertebral column. Ribs. Sternum. The thoracic cage. Bones of the shoulder girdle: scapula and clavicle. Acromioclavicular and Sternoclavicular joints. Introduction. Development periods. Gametogenesis. Cell divisions (mitosis, meiosis). Primodial germ cells. Conversion into male and female gametes. Anatomical terms related to position & movement. Connective tissue: general structure of the bone. Biological & mechanical properties of bones. Classification of bones. Joints: fibrous, cartilaginous & synovial joints. General structure of synovial joint - types of synovial joints. Humerus. Shoulder joint. Radius. Ulna. Bones of the hand. Elbow joint. Wrist joint. The carpal tunnel. The hand as a functional unit. The bony pelvis. Hip bone. Sacrum. Coccyx. Sacroiliac joints. Symphysis pubis. Greater & lesser sciatic foramina. Inquinal ligament. Sex differences of the pelvis. Femur. Acetabulum. Hip joint. The bony pelvis. Hip bone. Sacrum. Coccyx. Sacroiliac joints. Symphysis pubis. Greater & lesser sciatic foramina. Inquinal ligament. Sex differences of the pelvis. Femur. Acetabulum. Hip joint. Uterus. Uterine tube. Ovary. Oogenesis. Female reproductive cycles. Ovulation. Testis. Spermatogenesis. Sperm. Sperm maturation. Fertilization. Formation of blastocyst. Implantation. Cranial nerves – main divisions and exits from the scull. Tibia. Fibula. Patella. Knee joint. (intra- & extracapsular ligaments) Menisci. Bones of the foot. Ankle joint. Tarsal joints. The foot as a functional unit. Divisions of the skull. Bones of the Neurocranium: frontal, occipital, sphenoid, ethmoid & parietal. Formation of the bilaminar germ disc. Yolk sac development. Trilaminar germ disc. Gastrulation. Neurulation. Development of the somites. Formation of the notochord. Early development of cardiovascular system. Phases of embryonic development. Folding of the embryo. Cranial nerves – main divisions and exits from the scull. Temporal bone. Bones of the visceral cranium: mandible, hyoid, maxilla, palatine, inferior nasal concha, lacrimal, vomer & zygomatic. Anterior, middle and posterior cranial fossae. The bony ear Anterior, middle and posterior cranial fossae. Orbital cavity. Nasal cavity. Oral cavity. Paranasal sinuses. Temporomandibular joint. Sutures of the vault of the skull. Pterygopalatine, retromandibular, temporal, infratemporal cranial fossae, limitations and communication. Anterior, middle and posterior cranial fossae.	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	seminar, e-learning, dissection classes

2.	Surface Anatomy of the Neck. Triangles of the Neck. Thyroid gland. Parathyroid. Cervical Plexus. Accessory Nerve. External & Internal Carotid Arteries. External & Internal Jugular Veins. Lymph Drainage of the Neck. Submandibular gland & Sublingual gland. Vagus & Phrenic nerves. Cervical portion of the sympathetic trunk. Estimation of embryonic and fetal age. Expected date of delivery. Infertility. Assisted reproductive Technology (ART). Human birth Defects. Amniocentesis. CVS. Intrauterine Growth Restriction (IUGR). Cranial nerves I–VI – nerve supply Muscles of facial expression. Blood and nerve supply of the face. (Facial artery & ophtalmic nerve). Facial nerve. Parotid gland. Dura mater – venous sinuses. (Venous drainage of the head). Blood & nerve supply of the meninges. Pterygopalatine, Temporal, Infratemporal & Retromandibular fossa. Maxillary artery. Maxillary & Mandibular divisions of V-th nerve. Pterygopalatine & Otic ganglions. The Orbit & its walls. Structure of the eyeball. Nerve & blood supply of the eyeball. Ciliary ganglion. The accessory organs of the eyeball (muscles, eyelids, lacrimal apparatus). Optic nerve. Oculomotor nerve. Trochlear nerve. Abducent nerve. Cranial nerves I–VI – nerve supply Pterygopalatine, fossa. Maxillary artery. Maxillary division of V-th nerve. Pterygopalatine ganglion. Temporomandibular joint. Temporal, infratemporal & retromandibular fossa. Muscles of mastication. Mandibular division of V-th nerve. Otic ganglion. Development of the head and neck, pharyngeal arches. Cranial nerves VII–XII – nerve supply Pharynx. Parapharyngeal space. Tonsills. Glossopharyngeal nerve. Vagus nerve. Accessory nerve. Oral cavity. Teeth. Gingiva. The tongue. Tonsills. Hypoglossal nerve. The ear (external, middle & internal). Vestibulocochlear nerve. Cranial nerves VII–XII – nerve supply Larynx. Nasal cavity. Paranasal sinuses – structure, blood supply and innervation. Cranial nerves – clinical appearances	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	seminar, e-learning, dissection classes

3.	The Meninges. Epi-, subdural space, subarachnoid space. Production of the cerebrospinal fluid and its circulation. The arterial supply and venous drainage of the CNS. The spinal cord. The spinal nerve. Cerebral tracts. The main anatomical terms related to the CNS. The brainstem – the medulla, pons and midbrain. The cerebellum. Fourth ventricle. Central nervous system – overview. The Meninges. Epi-, subdural space, subarachnoid space. Production of the cerebrospinal fluid and its circulation.The arterial supply and venous drainage of the CNS. The diencephalon. (thalamus, hypothalamus, epithalamus, metathalamus). III-rd ventricle. The telencephalon. The cerebral lobes. Development of central nervous system CNS – clinical aspects Ascending tracts of CNS Descending tracts of central nervous system. CNS – clinical aspects	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	seminar, e-learning, dissection classes
4.	Surface anatomy of the thorax (lines of orientation). Thoracic walls - muscles, vessels, nerves (intercostal spaces).The mammary gland. Diaphragm. The thoracic cavity. Mediastinum Pleurae. Trachea. Lungs. The Mechanism of Respiration. Endothoracic Fascia. Heart development. Heart defects Pericardium. Structure of the Heart (Chambers of the Heart) Conducting System of the Heart. Arterial Supply & Venous Drainage of the Heart. Thymus. Large Vessels of the Thorax: Superior & Inferior Vena Cava. Aorta. Pulmonary Veins. Pulmonary Trunk. Esophagus. Lymph Drainage of the Thorax. Azygos veins. Development of the vessels. Fetal circulation Thorax – innervation Vagus nerves. Phrenic nerves. Thoracic part of the sympathetic trunk. The axilla & its contents. Axillary artery, vein, and lymph nodes. Brachial plexus. Muscles of the scapula Skeletal system. Development of the bones and cartilages. Limbs development. Limbs defects. Thorax – innervation Muscles of the arm. Brachial artery & vein. Nerves of the arm The cubital fossa. Elbow joint. Fascial compartments of the forearm. Muscles of the anterior compartment of the forearm. Radial and ulnar artery & veins. Superficial veins of the upper limb. Nerves of the forearm. Examination of musculo-skeletal system – anatomical aspects Nerve/vessels compression syndromes Muscles of the lateral & posterior compartment of the forearm. Muscles of the hand. The carpal tunnel. Superficial & deep palmar arch. Skin innervation of the upper limb. Lymph nodes & lymph drainage of the upper limb. Upper limb – clinical correlations. Nerve/vessels compression syndromes.	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	seminar, e-learning, dissection classes

5.	Development of the gastrointestinal systemAbdomen – the main divisions. Abdominal lines and planes. Abdominal wall (structure) - muscles, blood supply, innervation. Inquinal canal. Fascial & peritoneal lining of the abdominal walls. Surface anatomy – (landmarks): xiphoid process, costal margin, iliac crest, pubic tubercle, symphysis pubis, inguinal ligament, linea alba, umbilicus. Peritoneal cavity. Peritoneal pouches, fossae, spaces and gutters. Bursa omentalis. Peritoneal ligaments, omenta and mesenteria. Gastrointestinal tract: abdominal portion of esophagus, stomach, small intestine (duodenum, jejunum, ileum). Celiac artery. Superior mesenteric artery. Abdomen: walls and main divisions – clinical correlations. Development of the gastrointestinal system The large intestine (ileocecal valve, cecum, vermiform appendix, colon). Inferior mesenteric artery and vein. Pancreas. Spleen. The liver. Portal vein. Porto-systemic anastomoses. Gallbladder. Bile ducts. Abdominal organs – topography, relations. Abdomen and pelvis – imaging Retroperitoneal space. Kidneys. Suprarenal glands. Ureters. Abdominal aorta. Inferior vena cava. Lymph drainage of the abdomen. Orientation of the pelvis. False & true pelvis. Pelvic walls. Pelvic floor. Pelvic peritoneum. Nerves and vessels of the pelvis. Surface landmarks of the pelvis. Pelvic joints. Rectum. Urinary system –development. Urinary bladder. Urinary tract. Development of the genital system. Male genital organs. Perineum. Female genital organs. Clinical correlations on the pelvis (pelvic measurements in obstetrics, abnormalities and varietes of the female pelvis, fractures of the pelvis. Anatomical aspects of pregnancy. Regions of the lower limb. Muscles of the anterior & medial fascial compartment of the thigh. Femoral sheath. Femoral triangle. Femoral artery and vein. Subsartorial canal. Lumbar plexus. Clinical aspects of abdomen. Surgical anatomy. Autonomic plexuses of the abdomen and pelvis. Muscles of the buttock, subgluteal space. Greater & lesser sciatic foramina. Muscles of the posterior fascial compartment of the thigh. Sacral plexus. Pudendal nerve. Muscles of the posterior compartment of the leg. Posterior tibial vessels. Tibial nerve. Lymph drainage of the lower limb. Superficial veins of the lower limb. Muscles of the foot. Arterial & venous supply of the foot. Foot as a functional unit. Innervation of the skin of the lower limb. Clinical aspects of lower limb The back.	W1, W2, W3, W4, W5, U1, U2, U3, K1, K2, K3, K4, K5	seminar, e-learning, dissection classes

Course advanced

Semester 1

Teaching methods:

classes / practicals, dissection classes, e-learning, seminar, lecture, practical classes

Activities	Examination methods	Credit conditions
e-learning	theoretical colloquiums, test	Participation in classes and lectures is obligatory.
seminar	theoretical colloquiums, test	Participation in classes and lectures is obligatory.
dissection classes	theoretical colloquiums, test	Participation in classes and lectures is obligatory.

Semester 2

Teaching methods:

classes / practicals, dissection classes, e-learning, seminar, lecture, practical classes

Activities	Examination methods	Credit conditions
e-learning	written examination, theoretical colloquiums, test	Participation in classes and lectures is obligatory.
seminar	written examination, theoretical colloquiums, test	Participation in classes and lectures is obligatory.
dissection classes	written examination, theoretical colloquiums, classroom observation, test	Participation in classes and lectures is obligatory.

Additional info

1. Credit requirements
The whole material of the course has been divided into 5 parts including:
1) general anatomy (incl. osteology and arthrology), skull, general embriology
2) head and neck
3) central nervous system
4) thorax, upper limb
5) abdomen and pelvis; lower limb.
CAUTION: During the course of anatomy, the student is supposed to have the knowledge acquired from all previous practical and theoretical classes.
Much of the course work is carried out in the dissection rooms. Student will need to provide and bring a clean white lab coat to the dissection room, with name on the front where it can be read by staff, and wear it always in the dissection room. Unauthorized persons are not allowed to enter the dissection rooms.
The mid-semestral exams will
consist of two parts:
a) laboratory (identification of parts of organs) – 20 questions (for each correct answer one can receive maximally 1 point), there is 30 seconds per each specimen for its recognition.
Passing the laboratory part is NOT a prerequisite for participation in the second part of the mid-semestral test.
b) theoretical (multiple choice test, matching, etc.) – 40 questions. For each correct answer you receive 1 point. The test includes embriology questions.
The list of specimens placed in the end of syllabus is a supplementary list only (it is only a help for the Students), so both during the mid-semestral and final practical exams specimens out of the list can be used.
It is not possible to postpone a mid-semestral test.
Only students who received ≥150 points (≥50%) of all mid-semestral tests get the credit and are allowed to take the final exam.
Student who received less than 150 points to be allowed to take the final exam will have to pass a credit test (>50%).

2. Attendance requirements
Participation in classes and lectures is obligatory.
Maximum six absences per two semesters are allowed – student who exceeds the allowed number of six absences fails to get the credit.

3. Type of the final exam
The final exam, held in July, is the ultimate basis for the completion of the course.
Only students who have not exceeded the allowed number of absences and have received at least 150 points (50%) of all tests are allowed to take the final exam.

Evaluation of the anatomy course is based on the results of the final exam, however we consider also the results of the mid-semestral tests.
The final exam, covering the whole material of the course consists of two parts:
a) laboratory: identification of specific structures shown on cadavers; their parts; separate organs or bones (20 questions: bones (3), skull (1), upper & lower limb (4), thorax (2), abdomen & pelvis (3), head & neck (3), central nervous system (4). A Student receives 2 points for correct answer.
Passing the laboratory part is NOT a prerequisite for participation in the second part of the final exam!!! This rule is valid for the make-up exam, as well.
b) theoretical: (multiple choice test, matching, etc., similar form to the mid-semestral tests). Questions may also include problems based on histology and
embryology. The test consists of 100 questions which cover the whole theoretical
material.
Grading system for the final exam is as follows:
– very good (5.0) approximately ≥90% of all available points
– good plus (4.5) ≥80%
– good (4.0) ≥70%
– satisfactory plus (3.5) ≥60%
– satisfactory (3.0) ≥50%
– failed (2,0) <50%.
A Student is exempted from the final practical exam if results of practical mid-semestral tests exceed 90%.
To pass the exam one should receive at least 50% on practical and 50% on test separately.
The final grade consists of: value of points received during final practical + number of points received during final test and a bonus points (1 point for each next 10 points above 200) received during the mid-semestral tests, i.e. a Student A received 218 points during all six mid-semestral tests, later on the final practical exam he (she) received 28 points out of 40 and on the final test 68 points out of 100. His (her) final grade is: 2 (18 points above 200) + 28 + 65 = 95 points (63,3%) = satisfactory plus

4. Retake information
The make-up exam (held in September) has a form of both practical exam and test. The test consists of 60 questions (multiple choice and matchings). Students who passed practical exam during first option DO NOT have to repeat it in September

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Biochemistry with Elements of Chemistry

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21, 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** B. Scientific basics of medicine
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 1	- **Activities and hours** seminar: 12, laboratory: 23, e-learning: 24	0.0

Period	**Examination**	**Number of ECTS points**
Semester 2	credit **Activities and hours** seminar: 20, laboratory: 19, e-learning: 18	10.0

Period	**Examination**	**Number of ECTS points**
Semester 3	examination **Activities and hours** seminar: 28, laboratory: 12, e-learning: 34	6.0

Goals

C1	To provide students with the knowlegde about basic biochemical processes and the molecular basis of life in order to understand physiological and pathological phenomena learned during the studies.
C2	To familiarize students with basic biochemical laboratory techniques, the analysis of quantitative data and using modern sources of information (databases).
C3	To provide students with the skills for searching and selecting useful information concerning the biochemical basis of physiological and pathological processes

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	water and electrolyte management in biological systems	B.W1	oral answer, test, gap filling test, multiple choice test
W2	acid-base balance and buffer mechanism, and their importance in systemic homeostasis	B.W2	oral answer, assignment report, test, gap filling test, multiple choice test
W3	terms: solubility, osmotic pressure, isotonia, colloidal solutions and Gibbs-Donnan equilibrium	B.W3	oral answer, test, gap filling test, multiple choice test
W4	basic reactions of inorganic and organic compounds in aqueous solutions	B.W4	oral answer, assignment report, test, gap filling test, multiple choice test
W5	structure of simple organic compounds included in macromolecules present in cells, extracellular matrix and body fluids	B.W10	oral answer, test, gap filling test, multiple choice test
W6	structure of lipids and polysaccharides and their functions in cellular and extracellular structures	B.W11	oral answer, test, gap filling test, multiple choice test
W7	primary, secondary, tertiary and quaternary structure of proteins, as well as post-translational and functional modifications of proteins and their importance	B.W12	oral answer, assignment report, test, gap filling test, multiple choice test
W8	nucleotide functions in the cell, primary and secondary DNA and RNA structures and chromatin structure	B.W13	oral answer, test, gap filling test, multiple choice test
W9	functions of the genome, transcriptome and human proteome, and basic methods used in their examination, processes of DNA replication, repair and recombination, transcription and translation and degradation of DNA, RNA and proteins, as well as concepts for regulation of gene expression	B.W14	oral answer, assignment report, test, gap filling test, multiple choice test
W10	basic catabolic and anabolic pathways, ways of regulating them, and the influence of genetic and environmental factors on them	B.W15	oral answer, assignment report, test, gap filling test, multiple choice test
W11	metabolic profiles of basic organs and systems	B.W16	oral answer, test, gap filling test, multiple choice test

W12	methods of intercellular communication, as well as between the cell and the extracellular matrix, and signal pathways in the cell, and examples of disorders in these processes leading to the development of cancer and other diseases	B.W17	oral answer, test, gap filling test, multiple choice test
W13	processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body	B.W18	oral answer, test, gap filling test, multiple choice test
W14	principles of conducting scientific, observational and experimental studies and in vitro studies for the development of medicine	B.W29	oral answer, test, gap filling test, multiple choice test
W15	biochemical fundamentals of xenobiotic metabolic processes	B.W32	oral answer, test, gap filling test, multiple choice test
Skills – Student can:			
U1	calculate the molar and percentage concentrations of compounds and the concentrations of substances in isoosmotic, mono- and multicomponent solutions	B.U3	oral answer, assignment report, test
U2	calculate the solubility of inorganic compounds, determine the chemical background to the solubility or absence of organic compounds and its practical importance for dietetics and therapy	B.U4	oral answer, assignment report, test
U3	determine the pH of the solution and the effect of changes in pH on inorganic and organic compounds	B.U5	oral answer, assignment report, multiple choice test
U4	predict the direction of biochemical processes depending on the energetic state of cells	B.U6	oral answer, assignment report, multiple choice test
U5	use basic laboratory techniques such as qualitative analysis, titration, colorimetry, pH-metry, chromatography, electrophoresis of proteins and nucleic acids	B.U8	assignment report
U6	use databases, including online databases, and search for the necessary information using the available tools	B.U10	oral answer, assignment report
U7	use on-line databases of the human genome	B.U23	oral answer, assignment report
U8	operate simple measuring instruments and evaluate the accuracy of measurements made	B.U9	assignment report
U9	plan and perform simple scientific research and interpret its results and draw conclusions	B.U13	assignment report
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral answer
K2	use objective sources of information	O.K7	oral answer
K3	formulate conclusions from own measurements or observations	O.K8	oral answer, assignment report

Calculation of ECTS points

Semester 1

Activity form	Activity hours*
seminar	12
laboratory	23
e-learning	24
preparation for classes	25
preparation for test	25

Student workload	**Hours** 109
Workload involving teacher	**Hours** 59
Practical workload	**Hours** 23

* hour means 45 minutes

Semester 2

Activity form	Activity hours*
seminar	20
laboratory	19
e-learning	18
preparation for test	30
preparation for classes	30

Student workload	**Hours** 117
Workload involving teacher	**Hours** 57
Practical workload	**Hours** 19

* hour means 45 minutes

Semester 3

Activity form	Activity hours*
seminar	28

laboratory	12
e-learning	34
preparation for examination	85
preparation for classes	40
preparation for test	45
preparation of multimedia presentation	5
information collection	5

Student workload	**Hours** 254
Workload involving teacher	**Hours** 74
Practical workload	**Hours** 12

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Types of chemical bonds. Organization of macromolecules. The importance of weak interactions. Chemical reactions in solutions. Steady state. Electrolytic dissociation, the ionic product of water, solubility equilibrium, pH of acids and bases solutions. Buffer mixtures. The role of physiological buffers. Equilibria in ligand- protein binding - ligand saturation, dissociation constants of complexes. Colligative properties of solutions. Osmosis. Osmotic and oncotic pressure. Colloidal solutions. Elements of thermodynamics and chemical kinetics. Concepts: internal energy of the system, entropy, free enthalpy. Rate constant of the reaction. Activation energy. Catalysis. Redox reactions, Standard and biological reduction potentials:	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U8, K2, K3	seminar, e-learning, laboratory
2.	Basic concepts in organic chemistry. Types of isomerism. Aromatic rule. Derivatives of hydrocarbons: alcohols, thiols, phenols, aldehydes, ketones (reactions of their oxidation and reduction). Keto-enol tautomerism. Biologically important carboxylic acids and their derivatives. Hydroxy and keto acids. Active derivatives of carboxylic acids. Transfer Potential. Biological phosphorylation reactions - the role of ATP. Lipids - classification, properties.	W4, W5, W6, U4, K2	seminar

3.	Carbohydrates - classification, nomenclature, stereo-isomerism, reducing properties. Formation of O- and N-glycosides, esterification, formation of amino sugars. Di-, oligo- and polysaccharides. Heteroglycans. Amines and amides. Heterocyclic compounds. Bases found in DNA and RNA. Nucleosides and nucleotides. Reactions of amines with nitric acid (III). Carbonic acid amides - carbamates, urea.	W4, W5, W6, W8, K2	seminar
4.	Amino acids - classification. Peptides - peptide unit structure. Calculation of pI values of amino acids and peptides. Proteins - structure, physicochemical properties. Globular proteins. Myoglobin and hemoglobin - structure and function. Fibrous proteins (collagen, keratin). Plasma proteins.	W5, W7, U3, U5, U8, K2, K3	seminar, e-learning, laboratory
5.	Enzymes. Specificity and catalytic efficiency. Kinetics of the enzymatic reaction. Enzyme classes. Coenzymes (the role of vitamins). Regulation of activity (allosteric enzymes). Examples of the mechanism of enzyme action. The role of enzymes in diagnostics. Enzyme inhibitors.	W10, W7, U5, U8, U9, K2, K3	seminar, e-learning, laboratory
6.	Fundamentals of bioenergetics. The role of ATP. Anabolism and catabolism. Respiratory chain, oxidative phosphorylation. Krebs cycle. Reactive oxygen species - formation in the body, effects, methods of disposal.	W10, W4, U4, U5, U8, U9, K2, K3	seminar, e-learning, laboratory
7.	Carbohydrate digestion and absorption. Glycolysis. Substrate-level phosphorylation. Pentose phosphate pathway. Glycogen metabolism. Gluconeogenesis. Fructose and galactose metabolism. Coordination of carbohydrate metabolism at the body level. Glucose homeostasis and its disorders.	W10, W5, W6, U4, U5, K2, K3	seminar, e-learning, laboratory
8.	Digestion, absorption and transport of lipids. Lipases. Plasma lipoproteins (types, metabolism, role). Oxidation of fatty acids. Synthesis and role of ketone bodies. Synthesis of saturated and unsaturated fatty acids. Lipid synthesis. Intracellular degradation of complex lipids. Synthesis of cholesterol and its derivatives (bile acids, hormones). Eicosanoid metabolism.	W10, W5, W6, K1, K2	seminar, e-learning
9.	Protein digestion. Absorption and fate of amino acids. Protein nitrogen removal. Urea synthesis. Ammonia toxicity. Gluco and ketogenic amino acids. Degradation of selected amino acids and synthesis of endogenous amino acids. The role of one-carbon fragments and transmethylation in the metabolism of amino acids and their derivatives. Conversion of phenylalanine and tyrosine. Metabolism of nitrogen compounds derived from the amino acids: heme, creatine, adrenalin, serotonin. Biosynthesis and degradation of purine and pyrimidine nucleotides.	W10, W11, K2	seminar, e-learning
10.	Nucleic acids: the structure and physico-chemical properties of DNA and RNA. Replication. Mutations and DNA repair mechanisms. Transcription and post-transcriptional modifications. Translation. Post-translational modifications and protein sorting. Cellular protein degradation. Basic methods of molecular biology (PCR, gene expression analysis - RT-PCR, DNA electrophoresis, hybridization).	W8, W9, U5, U6, U7, U8, U9, K1, K2, K3	seminar, e-learning, laboratory

11.	Biochemistry of detoxification processes. The role of cytochromes P450, coupling reactions. Metabolism of ethanol.	W11, W15, K2	seminar, e-learning
12.	Basic concepts of signal transduction. Membrane and nuclear receptors. Signaling cascades of cell cycle regulation. Cellular transformation in tumor development: morphological features and metabolism of the tumor cell. Oncogenes, suppressor genes. Signal transduction disorders. Invasion and metastasis of cancer. Apoptosis.	W10, W12, W13, W14, W9, K2	seminar, e-learning
13.	Integration and coordination of metabolic changes. Energy metabolism of various tissues - after meals, during fasting and starvation. Hormonal regulation of metabolism at the cell and body levels. Metabolic syndrome.	W10, W11, W12, U4, K1, K2	seminar, e-learning

Course advanced

Semester 1

Teaching methods:

computer classes, laboratories (labs), e-learning, seminar, lecture

Activities	Examination methods	Credit conditions
seminar	multiple choice test	
laboratory	oral answer, gap filling test, multiple choice test	Atendance at seminars is obligatory. At the end some seminars the students will be subjected to a closing test.
e-learning	assignment report, gap filling test, multiple choice test	Attendance at labs is obligatory. Theory included to mid-term and final exams. Labs evaluation: up to 4 points per lab (2 points from the mini-test and 2 from lab reports) included into the total points collected during the Biochemistry course.

Semester 2

Teaching methods:

computer classes, laboratories (labs), e-learning, problem solving method, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Three regular exams (multiple choice tests, 40 questions test 2 and test 3 or in case of the 1st test 25 plus 5 chemical calculations, each per 3 points) will be organized during Part I. Students who accumulate at least 60% of the total number of points (from tests, seminar and labs) will receive the credit for Biochemistry with Chemistry Part I. Students who collect less than 60% points will have to pass the additional test to get credit f (multiple choice test, 60 questions) - passing threshold at 36 points. Only students who get credit for Part I) will be allowed to take Part II of the Biochemistry with elements of Chemistry course. In case of long term student absence in seminars or labs, the conditions for credit are established by course Coordinator.
laboratory	gap filling test, multiple choice test	Attendance at seminars is obligatory. At the end of some seminars students will be subjected to a closing test (points included in the total number of points for the Biochemistry course).
e-learning	assignment report, test	Attendance at labs is obligatory. Basic knowledge during labs (minitests). Theory included to mid-term and final exams. Labs evaluation: up to 4 points per lab (2 points from the mini-test and 2 from lab reports) included into the total points collected during the Biochemistry course.

Semester 3

Teaching methods:

case study, brainstorm, laboratories (labs), discussion, e-learning, presentation, group work, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Part II scoring - Two midterm exams will be organized during Part II - MCQ. Final exam covering both parts, multiple choice test, will be held at the end of the 3rd semester and will cover the entire course, including the theoretical basis of experimental labs. Students, who accumulate at least 60% of all possible points (midterm tests + seminars + labs) will receive credit for the course. To pass the makeup exam students will have to get minimum 60% points from the test (multiple choice test, 80 questions).
laboratory	oral answer, test	Participation in seminars is obligatory. At the end some seminars the students will be subjected to a closing test (points included in the total number of points for the Biochemistry course). During the Part II, each student will prepare a Power Point presentation on a selected topic.
e-learning	assignment report, test, gap filling test	Participation in labs is obligatory. Evaluation: up to 4 points per lab (2 points from the short test and 2 from lab reports) are included into the total number of points collected during the Biochemistry course.

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Physiology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** B. Scientific basics of medicine
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 1	- **Activities and hours** e-learning: 65, laboratory: 23	0.0

Period	**Examination**	**Number of ECTS points**
Semester 2	examination **Activities and hours** e-learning: 65, laboratory: 22	12.0

Goals

C1	The major goal of the Physiology course is to provide the clear and up-to-date knowledge on the functions and regulations of the human body for medical students. In particular, our major interest is dedicated to present the medical physiology to medical students in concise, uncomplicated and understandable fashion with focus to the following topics: - Basic principles of body fluids and water-electrolyte balance of the human body - Concepts of: solubility, osmotic pressure, isotonic conditions, colloidal solutions and Gibbs-Donnan balance - Transcellular and intracellular cell communications and the cell signaling - Physiology of skeletal and smooth muscle and the functions of circulating blood - Background necessary to understand the impulse conduction and stimulation in peripheral and central nervous system, higher functions and basic functions of centers in the brain and other centers of central nervous system in order to understand the homeostatic control of body organs and brain special senses - Relevant physical laws explaining the blood flow and gaseous molecules flow along with factors affecting endothelial resistance in circulatory blood vessels and the term of air resistance in airways of respiratory tract - Functions and regulatory mechanisms of all organs and systems of human body including muscular system, cardiovascular and respiratory systems, gastrointestinal tract, endocrine and urinary systems, skin surface system physiology, their interactions and dependence - Metabolic profile of major organs and systems - Acid-base balance, the mechanism of buffer functions and their significance for the future medical practice - Digestive tract enzymes, the mechanism of gastric acid formation and secretion, pancreatic functions, bile synthesis, release and circulation, the course and mechanism of digestion and absorption process of food products and gastrointestinal disorders - The process of food intake and the consequences of bad nutrition leading to nutritional disorders such as cachexia, obesity and unbalanced diet - Hormones and their regulation, release and mechanism of action and hormonal disturbances and disorders - The course and regulation of reproductive functions in female and male - Basic principles and quantitative parameters describing efficiency of particular human organs and systems

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	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W2	water and electrolyte management in biological systems	B.W1	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W3	acid-base balance and buffer mechanism, and their importance in systemic homeostasis	B.W2	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W4	methods of intercellular communication, as well as between the cell and the extracellular matrix, and signal pathways in the cell, and examples of disorders in these processes leading to the development of cancer and other diseases	B.W17	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W5	basics of induction and transmission in the nervous system and higher nervous actions as well as physiology of striated and smooth muscles and blood functions	B.W20	written examination, theoretical colloquiums, classroom observation, oral answer, essay, multiple choice test, written credit

W6	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	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W7	the mechanism of the body's aging	B.W23	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W8	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	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
W9	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.W25	written examination, theoretical colloquiums, classroom observation, oral answer, multiple choice test, written credit
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	written examination, theoretical colloquiums, classroom observation, oral answer, written credit
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	written examination, theoretical colloquiums, classroom observation, oral answer, written credit
U3	perform simple functional tests assessing the human body as a stable regulation system (stress tests, exercise tests) and interpret numerical data on basic physiological variables	B.U7	written examination, theoretical colloquiums, classroom observation, oral answer, written credit
U4	use databases, including online databases, and search for the necessary information using the available tools	B.U10	theoretical colloquiums, classroom observation, written credit
U5	indicate the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.U14	written examination, theoretical colloquiums, classroom observation, oral answer, written credit
U6	identify sources of electrical signals in the body	B.U15	written examination, theoretical colloquiums, classroom observation, oral answer, written credit
U7	use on-line photo, audio and video libraries	B.U21	classroom observation
U8	use various types of computer simulators and e-learning tools for educational purposes, with particular emphasis on virtual patients	B.U26	classroom observation, oral answer, written credit

U9	provide expert knowledge through simple IT techniques of knowledge representation such as a block diagram or a rule database	B.U28	classroom observation, oral answer, written credit
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	written examination, theoretical colloquiums
K2	formulate conclusions from own measurements or observations	O.K8	written examination, theoretical colloquiums

Calculation of ECTS points

Semester 1

Activity form	**Activity hours***
e-learning	65
laboratory	23
preparation for classes	4
preparation for colloquium	10
preparation for classes	5
preparation for test	10
preparation of multimedia presentation	6
kształcenie samodzielne	25
preparation of a report	4
preparation of a paper	5

Student workload	**Hours** 157
Workload involving teacher	**Hours** 88
Practical workload	**Hours** 23

* hour means 45 minutes

Semester 2

Activity form	**Activity hours***
e-learning	65

laboratory	22
preparation for colloquium	10
preparation for classes	5
preparation for test	10
preparation of multimedia presentation	6
kształcenie samodzielne	30
preparation of a report	8
preparation of a paper	10
preparation for examination	25

Student workload	**Hours** 191
Workload involving teacher	**Hours** 87
Practical workload	**Hours** 22

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	1. General Physiology: internal cell environment, homeostasis and cell function control, the plasma membrane, membrane transport and the resting membrane potential, the action potential, synaptic transmission, neuromuscular junction, synaptic events, maintenance of nerve function, skeletal muscle, smooth muscle, muscle tension, skeletal and smooth muscle contractions and their regulation, molecular mechanism of muscle contraction muscle fatigue, the principles of autonomic nervous system.	W1, W4, W5, W6, U3, U6, U8, K1	e-learning, laboratory
2.	2. Neurophysiology: neural organization of nervous system, sensory receptors, nerves and sensory axis, motoneurons of spinal cord and brainstem, sensory and motor neurons of the upper and lower neurons of spinal cord, brain cortex, basal nuclei, cerebellum, speech and its associated brain centers, neural control of emotional behavior, the regulation of sleep, alert (awareness), process of learning and memory, body temperature regulation and brain centers responsible for sense, vision and hearing, vestibular system, sense of smell and taste. Current methods of neurological disorders diagnostics.	W1, W4, W5, W7, U1, U4, U5, U6, K1	e-learning, laboratory

3.	3. Blood: Functions of the blood and its components, plasma composition and morphotic elements of the blood, hematopoiesis, blood groups, blood clotting, immune system, fibrinolysis, lymph circulation.	W1, W4, W6, W8, U2, U3, U5, U9, K1, K2	e-learning, laboratory
4.	4. Cardiovascular physiology: An overview of the cardiovascular system, principles of hemodynamics, the electrical activity of the heart, electrocardiogram, mechanical activity of the heart and cardiac pump, cardiac cycle, regulation of venous return and cardiac output, blood pressure and its regulation, special circulations, capillary flow and filtration-reabsorption processes, control mechanisms in circulatory functions, local and systemic control of blood circulation, cardiovascular reflexes, current methods of determination of cardiovascular functions.	W1, W6, W8, W9, U1, U5, U8, K1, K2	e-learning, laboratory
5.	5. Respiratory Physiology: the structure and function of respiratory tract and airways, the ventilation and the mechanics of breathing, lung spirometry in medicine, gases transfer and transport, oxygen-carbon dioxide exchange in the lungs, pulmonary circulation, the control of ventilation, functional methods of determination of respiratory tract, the respiratory and circulatory adaptation to exercise.	W1, W2, W3, U2, U3, U5	e-learning, laboratory
6.	6. Renal Physiology: structure and functions of kidney, the regulation of fluid and electrolyte balance, renal blood flow and glomerular filtration rate, the role of kidney in homeostasis, reabsorption processes in proximal tubule, loop of Henle, distal tubule and collecting ducts, Urine osmolarity, volume and composition regulations in the kidney and the consequences of kidney disorders, renal regulations of potassium, calcium and magnesium levels by kidney, the role of kidney in maintenance of acid-base balance.	W2, W3, W8, U1, U5, K2	e-learning, laboratory
7.	7. Gastrointestinal Physiology: food intake control and regulation, the neurogastroenterology and motility, the gastrointestinal secretion, digestion and absorption, physiology of gastrointestinal hormones, intestinal transport mechanisms of water, electrolytes and food digestion products, brain-gut axis, major gastrointestinal disorders and methods of investigation of gastrointestinal tract.	W6, W7, W9, U4, U7, U9, K1, K2	e-learning, laboratory
8.	8. Endocrine Physiology: endocrine function mechanisms, the hypothalamic and pituitary gland physiology, the synthesis and regulation of the function of thyroid and adrenal glands, pancreatic endocrine function, the hormonal regulation of body metabolism, the endocrine regulation of calcium, phosphate and bone homeostasis, the hormonal regulation of body growth, female and male reproductive system, control of endocrine function of reproductive tract, physiology of menstrual cycle, fertilization, pregnancy and lactation, an overview of diagnostics in the function of endocrine glands and the consequences of the functional disorders of endocrine system.	W1, W6, W9, U5, U8, K1	e-learning, laboratory

Course advanced

Semester 1

Teaching methods:

case study, brainstorm, laboratories (labs), classes in simulated conditions, demonstration, discussion, e-learning, educational film, problem solving method, presentation, group work, lecture, practical classes, practical classes in simulated conditions

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	Attendance is obligatory and will be monitored.
laboratory	multiple choice test	Multiple choice midterm exams, multiple choice test as final exam. No absences are allowed.

Semester 2

Teaching methods:

laboratories (labs), classes in simulated conditions, demonstration, discussion, e-learning, educational film, problem solving method, presentation, group work, lecture, practical classes in simulated conditions

Activities	Examination methods	Credit conditions
e-learning	written examination, classroom observation	Attendance is obligatory and will be monitored.
laboratory	written examination, theoretical colloquiums, classroom observation, oral answer, essay, written credit	Attendance is obligatory. In case of long term, excused absence contact with course coordinator is required

Additional info

The Students knowledge acquisition will be checked by 5 midterm exams from particular Physiology parts. These midterm exams will be consisting of multiple choice questions each within the time of 50 - 60min allowed to solve these questions. The Final Physiology exam is consisting of multiple choice questions from all 5 subsequent parts of Physiology course will last about 2 hours. The Final exam pass mark will be assigned to Students after calculation of Gaussian distribution of their scores.

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Histology with Cytophysiology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** A. Morphological education
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 1	- **Activities and hours** e-learning: 24, laboratory: 36	0.0

Period	**Examination**	**Number of ECTS points**
Semester 2	examination **Activities and hours** laboratory: 28, e-learning: 20	11.0

Goals

C1	To provide students with the knowledge concerning the microscopic and submicroscopic structure and its relations to functions of cells, tissues and organs.
C2	To familiarize students with the morphological features related to functional specialization of cells, tissues, organs.
C3	To provide students with the skills allowing them to identify different cells, tissues and organs in the light and electron microscope.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	anatomical, histological and embryological denominations in Polish and English	A.W1	practical examination, multiple choice test
W2	basic cellular structures and their functional specializations	A.W4	practical examination, multiple choice test
W3	microarchitecture of tissues, extracellular matrix and organs	A.W5	practical examination, multiple choice test
Skills – Student can:			
U1	operate an optical microscope, including the use of immersion	A.U1	practical examination
U2	recognize histological structures corresponding to organs, tissues, cells and cellular structures in optical or electron microscopy images, describe and interpret their structure and relations between structure and function	A.U2	practical examination
U3	use anatomical, histological and embryological denominations in speech and writing	A.U5	practical examination, multiple choice test
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	multiple choice test
K2	formulate conclusions from own measurements or observations	O.K8	practical examination, multiple choice test

Calculation of ECTS points

Semester 1

Activity form	Activity hours*
e-learning	24
laboratory	36
preparation for classes	80

preparation for colloquium	20
participation in examination	2

Student workload	**Hours** 162
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 36

* hour means 45 minutes

Semester 2

Activity form	**Activity hours***
laboratory	28
e-learning	20
preparation for classes	40
preparation for examination	77
participation in examination	3

Student workload	**Hours** 168
Workload involving teacher	**Hours** 48
Practical workload	**Hours** 28

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Introduction to histology. Light and electron microscopy. Magnification and resolving power. Preparation of the tissues for light and electron microscopy. Basic histological methods. Principles of histochemistry, enzyme histochemistry, immunohistochemistry and hybridization techniques.	W1, U1, K1, K2	laboratory

2.	The cell - The biological membranes. Transport across the membranes. The cell membrane, glycocalyx, adhesion molecules. The cell nucleus. The nucleolus. The nuclear envelope and communication between the nucleus and the cytoplasm. Structure and function of ribosomes, the translation process. The endoplasmic reticulum (smooth and rough). The Golgi apparatus. Exo- and endocytosis, including receptor-mediated endocytosis. Lysosomes. Proteasomes. Mitochondria. Genetic apparatus and biogenesis of mitochondria. Peroxisomes. The cytoskeleton and its involvement in the motility of cells. Cell death: necrosis and apoptosis.	W1, W2, U1, U2, U3, K1, K2	e-learning, laboratory
3.	The epithelial tissue. Definition and components of a tissue. General characteristics and functions of epithelia. Classification and characteristics of different types of epithelia. Introduction to stem cells and renewal of the epithelia. Epithelial cell polarity. Free surface of the epithelial cells and its structures: microvilli and cilia, mechanism of ciliary movement. The basolateral surface: cell-cell and cell-matrix junctions, their structure and functions. Basal lamina. Glands: morphological and functional classification.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
4.	The connective tissue proper. Chemical and structural characteristics of the extracellular substance: matrix and fibers. Stages of collagen fiber production. Mesenchymal stem cells. Origin, structure and function of the connective tissue cells: fibroblasts, plasma cells, mast cells and macrophage family. General classification of connective tissue. Characteristics of connective tissue proper types. The comparative characteristics of white and brown adipose tissue.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
5.	Cartilage and bone. Cartilage: characteristics of the extracellular substance, chondral territories, nourishment of cartilage. Types of cartilage and their mechanical properties. Bone: organic and inorganic components of the extracellular substance. Bone cells: osteoprogenitor cells, osteoblasts, osteocytes, osteoclasts.The bone lamella, organization of cancellous and compact (Haversian) bone. Intramembraneous and endochondral ossification. Growth and remodelling of the bone. Principles of biomineralization. The joint.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
6.	Blood and hemopoiesis. Blood plasma. Blood cells, their counts, characteristics and functional adaptations. Erythrocyte and its cell membrane. Comparative characteristics of granulocytes and agranuloytes. The role of granulocytes in the defense mechanisms: neutrophils and bateria-killing system, eosinophils, basophils. Lymphocytes – general characteristics. Monocytes and their functions. Blood platelets. The structure of hemopoietic bone marrow: the vascular and hemopoietic compartments. Hemopoiesis: stem cells, progenitor cells, the main hemopoietic lineages (erythroblastic, myeloblastic, megakaryocytic). Factors controlling the hemopoiesis.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory

7.	The muscle tissue. The contractile apparatus. Classification of the muscle tissue. Characteristics of smooth, skeletal and cardiac muscle cells/fibres. Structural and biochemical basis of smooth and striated muscle contraction. Sarcomere, its structure, contractile, regulatory and accessory proteins. The role of T-tubules and sarcoplasmic reticulum in excitation-contraction coupling. Motor end plate. Satellite cells. The organization of smooth muscle layer, skeletal muscle, and cardiac muscle including the conduction system. Muscle spindle and Golgi tendon organ. The nonmuscle contractile cells.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
8.	The nerve tissue. Definition of the neuron and its structural characteristics. Classification of neurons. Neural stem cells. Types of nerve fibers. Structural and chemical basis of neural conduction: resting and action potentials, the role of ion channels and myelin sheath. Structure and types of synaptic junctions, neurotransmitters, the synaptic transmission. Paracrine transmission. Types and functions of neuroglial cells. Organization of peripheral nerve and dorsal root ganglion. Central nervous system: composition of white and grey matter, microscopic organization of the spinal cord, cerebral and cerebellar cortex. The blood-brain barrier. Meninges and choroid plexus.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
9.	The vascular system. Components of the vascular wall. Endothelium – structural characteristics and functions. Mechanisms of transendothelial transport of substances and migration of leukocytes. Endothelial progenitor cells. The structure and types of capillaries. Precapillaries (metaarterioles) and postcapillary venules. Regulation of blood flow in capillary bed. Layers of the vascular wall, comparative characteristics of arteries and veins. Arterioles and arteries (muscular and elastic). The veins and their structural variability. Arteriovenous anastomoses. Carotid and aortic bodies, carotid sinus. The heart wall layers.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
10.	The lymphatic system. The innate immunity: pattern recognition receptors, NK cells. The adaptive immunity: cells involved in the immune reactions - antigen presenting cells, T- and B-lymphocytes and their subpopulations, characteristics and cooperation. Humoral and cell-mediated immune response. The lymphoid tissue and its organization. The lymphoid nodule. Structure and function of the lymph node. Spleen - organization and functions of white and red pulp, the splenic circulation. Thymus: general organization, epithelioreticular cell system and its role in the differentiation and maturation of T lymphocytes. Mucosa-associated lymphoid tissue: the tonsils.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
11.	The integument. Layers of the integument. Epidermis: keratinocytes and the keratinization process, melanocytes, Langerhans and Merkel cells and their functions. Organization of dermis and hypodermis. Eccrine and apocrine sweat glands and sebaceous glands: structure, function and mode of secretion. The hair follicle and its appendages. Epidermal stem cells. Vascularization and innervation of the skin, types of encapsulated mechanoreceptors and their function. Comparative characteristics of thick and thin skin.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory

12.	The alimentary system - Oral cavity and salivary glands. Definition and general characteristics of mucosa. Regional differentiation of oral mucosa. The tongue: lingual papillae, taste buds, mechanism of taste perception. Tooth: structure of the mineralized parts, dental pulp and periodontal membrane. The major and minor salivary glands: the secretory portions of serous and mucous type, structure and function of excretory ducts. Comparative characteristics of major salivary glands.General organization of the alimentary canal, characteristics of the wall layers. The esophagus. The wall of stomach: surface lining epithelium and its protective function, characteristics of the gastric glands and their cellular composition. The intestines and their adaptations to function (intestinal epithelium, villi and crypts), segmental differences in the wall structure. The gut-associated lymphoid tissue. Innervation of the alimentary canal.The enteroendocrine cells.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
13.	Large glands of the alimentary system. The pancreas - organization of the exocrine part, characteristics of the secretory pancreatic cell, acini and ducts. General organization of the liver, types of hepatic lobules. Structural and functional characteristics of the hepatocyte and its polarity. The hepatic sinusoids and associated cells. The hepatic circulation. Intra- and extrahepatic bile ducts.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
14.	The respiratory system. The airways - characteristics of the mucosa, the airway epithelium and its cell types, the mucociliary cleaning mechanism. Nasal mucosa: the respiratory and the olfactory regions. Olfactory epithelium: cell types and functions. Pharynx and larynx. The structure of trachea, bronchi and bronchioles. General organization of the lungs. The pulmonary alveoli: types and functions of pneumocytes, air-blood barrier, the surfactant and its role. The alveolar macrophages.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
15.	The endocrine system. General characteristics of endocrine glands. The pituitary gland: adeno- and neurohypophysis. The functional interrelations between hypothalamus and the pituitary, the role of the vascular system. Morphological and functional classification of cells in adenohypophysis, structure and function of pars nervosa. General organization of thyroid gland. The thyroid follicle: its cells and stages of thyroid hormone production. The C-cells. Adrenal cortex, its layers and hormones. The ultrastructural features of steroidogenic cells. Adrenal medulla: chromaffin cells and production of catecholamines. The pancreatic islets: ultrastructural and functional characteristics of their cells. The parathyroid glands - cell types and function. The pineal gland. The system of disseminated neuroendocrine cells (DNES, APUD). Molecular mechanisms of chemical signaling. Types of chemical signals and principles of chemical signaling. Receptor types. Membrane receptors. Signal transduction involving G-proteins, second messengers and their action. Enzyme-linked membrane receptors. Intracellular receptors and the mechanisms of cell response.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory

16.	The female reproductive system. The ovary - ovarian follicles and their successive developmental stages. The structure of the Graafian follicle. Follicular atresia. Formation, structure and function of corpus luteum, luteolysis and corpus albicans. Endocrine cells of the ovary. The oviduct: layers of the wall, characteristics of epithelium. The structure of uterine wall, changes of endometrium in the course of the menstrual cycle. The uterine cervix and vagina. Exfoliative cytology of cervical smears. Accessory organs of the female reproductive system. General organization of placenta. Formation, development and maturation of placental villi, characteristics of the placental barrier. The syncytiotrophoblast and its function. Decidua and basal plate: decidual cells, extravillous cytotrophoblast and its role. The histological structure of fetal membranes and umbilical cord. Cord blood as a source of stem cells. The mammary gland - general organization and changes related to development and functional status. Structure of secretory portion (alveolus), the secretory cell and mechanisms of milk secretion. The excretory ducts.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
17.	The male reproductive system. The testis - general structure. The seminiferous tubule and its tunica propria. The seminiferous epithelium, spermato- and spermiogenesis. Structure of the mature spermatozoon. Sertoli cells and their functions, the blood-testis barrier. The interstitial tissue: Leydig cells, testicular macrophages. The excretory passages: tubuli recti, rete testis, epididymis and vas deferens. Structure and function of associated glands: prostate, seminal vesicles and bulbourethral glands.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
18.	The urinary system. The kidney: cortex and medulla. Nephron and the localization of its segments in the renal parenchyma. The renal corpuscle and filtration barrier, mechanism of ultrafiltration. Structural and functional characteristics of the successive segments of the nephron. The collecting tubule and its role in urine condensation. The juxtaglomerular apparatus: its components and their function. Renal blood vessels. The excretory passages: urether and urinary bladder. Adaptation of the urinary bladder to the filling/voiding cycle.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory
19.	The organ of vision. General organization of the eyebulb and its layers. The sclera and cornea. The choroid and structures responsible for accommodation and adaptation: ciliary body and iris. Production and circulation of the aqueous humor. The lens. The retina: layers, characteristics of cones and rods, molecular basis of photoreception. Macula lutea and optic disk. The eyelid: conjunctiva, tarsal plate, glands. The lacrimal gland.	W1, W2, W3, U1, U2, U3, K1, K2	e-learning, laboratory

20.	The organ of hearing and balance. External ear: auricle and external auditory meatus, tympanic membrane. Middle ear: tympanic cavity, auditory ossicles, auditory tube, cavities of the mastoid process. Inner ear: bony and membraneous labyrinth. Saccule and utricle, semicircular ducts, endolymphatic duct and sac, cochlear duct. Structure and function of sensory structures: maculae, cristae and the organ of Corti. Characteristics of hair cells and supporting cells, morphological and molecular basis of hearing and balance.	W1, W2, W3, U3, K1, K2	e-learning

Course advanced

Semester 1

Teaching methods:

classes / practicals, e-learning

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	Passing mini-quizes (MCQ) concerning all subjects (approx. 9 questions in each). The mid-term MCQ exam (80 questions, 60% pass level), covering the material concerning the cell and the tissues (Cell & Tissues exam). A student who fails the exam will be allowed to retake it in about two weeks time. The final theoretical exam (MCQ, 100 questions, 60% pass level), covering the material concerning histology of systems and organs.
laboratory	practical examination, multiple choice test	The practical (laboratory) exam: Identification of cells/tissues/organs and their specific structures in 13 microscopic slides and 2 electron micrographs. This part is evaluated on the pass/fail basis, pass level 9 pts. 2. the theoretical part (MCQ, 100 questions, 60% pass level), covering the material concerning histology of systems and organs. Passed lab mini-tests.

Semester 2

Teaching methods:

classes / practicals, e-learning, lecture

Activities	Examination methods	Credit conditions
laboratory	practical examination, multiple choice test	Basic knowledge during labs (minitests). Theory included to mid-term and final exams. The practical (laboratory) exam: Identification of cells/tissues/organs and their specific structures in 13 microscopic slides and 2 electron micrographs. This part is evaluated on the pass/fail basis, pass level 9 pts.
e-learning	multiple choice test	Passing the theoretical part of the final exam (MCQ, 100 questions, 60% pass level), covering the material concerning histology of systems and organs..

Additional info

Requirements to get the credit and to be allowed to take the final exam: Completed labs and e-learning and passed the Cell & Tissues exam. Students who fail the Cell & Tissues retake will have to retake it once more, before the final exam.

Entry requirements

none

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

History of Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0222 History and archaeology	**Standard group** D. Behavioral and social sciences with elements of professionalism

Period	**Examination**	**Number of ECTS points**
Semester 1	examination **Activities and hours** e-learning: 24, seminar: 1	2.0

Goals

C1	To acquaint students with the historical development of the medicine on the grounds of the selected disciplines of basic and clinical sciences.

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	multiple choice test
W2	cultural, ethnic and national determinants of human behavior	D.W19	multiple choice test

W3	the history of medicine, the medicine of primitive peoples and ancient civilizations and the characteristic features of medieval medicine	D.W20	multiple choice test
W4	the characteristics of modern medicine and its most important discoveries	D.W21	multiple choice test
W5	the process of shaping new specialties in the field of scientific discipline - medical sciences and achievements of leading representatives of Polish and world medicine	D.W22	multiple choice test
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	multiple choice test
U2	critically evaluate the results of scientific research and adequately justify the position	O.U9	multiple choice test
U3	show responsibility for improving your qualifications and transferring knowledge to others	D.U16	multiple choice test
U4	demonstrate responsibility for one’s own professional development, contribute to the further development of sciences, transfer own knowledge to others	D.U22	multiple choice test
Social competences – Student is ready to:			
K1	formulate opinions on the various aspects of the professional activity	O.K10	multiple choice test
K2	use objective sources of information	O.K7	multiple choice test
K3	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	multiple choice test
K4	to be guided by the well-being of a patient	O.K2	multiple choice test

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	24
seminar	1
preparation for test	10
preparation for examination	10
participation in examination	1
conducting literature research	5
Student workload	**Hours** 51
Workload involving teacher	**Hours** 25

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	HISTORY OF ANATOMY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
2.	HISTORY OF PHYSIOLOGY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
3.	HISTORY OF PATHOLOGY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
4.	HISTORY OF PATHOLOGICAL ANATOMY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
5.	HISTORY OF INTERNAL MEDICINE: DIAGNOSIS	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
6.	HISTORY OF INTERNAL MEDICINE: THERAPY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
7.	HISTORY OF SURGERY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
8.	HISTORY OF BIOCHEMISTRY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
9.	HISTORY OF GENETICS	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
10.	HISTORY OF RADIOLOGY	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
11.	HISTORY OF HYGIENE AND SOCIAL MEDICINE	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
12.	HISTORY OF NATURAL HEALING AND ALTERNATIVE MEDICINE	W1, W2, W3, W4, W5, U1, U2, U3, U4	e-learning
13.	SUMMARY CLASS OF THE HISTORY OF MEDICINE	W1, W2, W3, W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

textual analysis, discussion, e-learning, seminar

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	Correct answer to control questions included in e-learning presentations
seminar	multiple choice test	Positive passing of the final multiple-choice test containing questions from the topics of lectures and seminar.

Additional info

All e-learning lectures must be positively fulfilled with final mark confirming that course is completed on e-learning platform before the final class and before proceeding to the final test.

Entry requirements

None

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

First Aid

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21, 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods Semester 1, Semester 2	**Examination** credit **Activities and hours** e-learning: 10, classes: 20	**Number of ECTS points** 2.0

Period Semester 4	**Examination** graded credit **Activities and hours** seminar: 6, classes: 24	**Number of ECTS points** 2.0

Goals

C1	First Aid (1st year) 1. Familiar the students with the principles of cardiopulmonary resuscitation in adults, children infants, including: - Assessment of the unconscious victim, - Placing the victim in the recovery position - Chest compression - Perform rescue breathing technique of mouth-to-mouth, mouth-to-nose, using a pocket mask and bag-mask valve - Use of Automated External Defibrillator 2. Familiar the students with the principles of first aid in life-threatening conditions not related to trauma 3. Familiar the students with the basic nursing skills: - iv placement - blood pressure taking - applying urine catheter
C2	First Aid (2nd year) 1. Repetition of the cardiovascular resuscitation rules in adults and children 2. Diagnosing and treatment of a patient in shock. 3. Introduction to medical first aid in life-threatening condition in trauma. 4. Introduction to ABCDE examination in trauma patient assessment. 5. Rules of medical equipment use: nasopharyngeal tube, laryngeal mask airway, self inflating bag with face mask, set for oxygen therapy, suction devices, spinal board, scoop stretcher, cervical collar, splint, space blanket. 6. Rules of maintaining safe environment to the patient and the rescuer.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	practical examination, test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	practical examination, test
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	practical examination
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	practical examination
U3	plan the diagnostic procedure and interpret its results	O.U3	practical examination
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	practical examination
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	practical examination
U6	inspire the learning process of others	O.U6	practical examination
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	practical examination
U8	communicate and share knowledge with colleagues in a team	O.U8	practical examination
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	practical examination
K2	to be guided by the well-being of a patient	O.K2	practical examination
K3	respect medical confidentiality and patients' rights	O.K3	practical examination

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	practical examination
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	practical examination
K6	promote health-promoting behaviors	O.K6	practical examination
K7	use objective sources of information	O.K7	practical examination
K8	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	practical examination
K9	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	practical examination

Calculation of ECTS points

Semester 1, Semester 2

Activity form	**Activity hours***
e-learning	10
classes	20
Student workload	**Hours** 30
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Semester 4

Activity form	**Activity hours***
seminar	6
classes	24
preparation for classes	60
Student workload	**Hours** 90
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 24

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Assessment of an unconscious victim, recovery position, calling for help	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
2.	Technique of opening the airway without instruments.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
3.	Assisted ventilation: mouth-to-mouth, mouth-to-nose, mouth-mouth/nose, pocket mask, bag-mask valve.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
4.	Technique for chest compression.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
5.	Technique for cardiopulmonary resuscitation in adults and children.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
6.	The use of an automated external defibrillator.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
7.	Principles for giving first aid in the life-threatening situation (choking, fainting, chest pain, stroke, seizures, injuries).	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
8.	Assessment of a conscious patient according to the ABC scheme and performing of the basic SAMPLE interview.	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
9.	Principles of selected nursing activities (blood pressure, getting vascular accesses, urinary catheterization).	W1, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, e-learning
10.	Ethical issues associated with conducting CPR	W1, U4, U7, U8, K1, K2, K3, K4	classes, e-learning
11.	Second year 1. Repetition of the cardiovascular resuscitation rules in adults. 2. Diagnosing and treatment of a patient in shock. 3. Introduction to medical first aid in life-threatening condition in trauma. 4. Introduction to ABCDE examination in trauma patient assessment. 5. Rules of medical equipment use: nasopharyngeal tube, laryngeal mask airway, self inflating bag with face mask, set for oxygen therapy, suction devices, spinal board, scoop stretcher, cervical collar, splint, space blanket. 6. Rules of maintaining safe environment to the patient and the rescuer.	W1, W2, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, e-learning

Course advanced

Semester 1, Semester 2

Teaching methods:

classes / practicals, classes in simulated conditions, e-learning, simulation, low fidelity simulation, lecture with multimedia presentation, practical classes, practical classes in simulated conditions

Activities	Examination methods	Credit conditions
e-learning	practical examination	- The presence at the exercises - one justified absence is possible. - Knowledge and active participation in classes - A positive completion of performance and a presentation about the set topics - To achieve a positive completion of an practical exam
classes	practical examination	- The presence at the exercises - one justified absence is possible. - Knowledge and active participation in classes - A positive completion of performance and a presentation about the set topics - To achieve a positive completion of an practical exam

Semester 4

Teaching methods:

classes / practicals, classes in clinical skills room, classes in simulated conditions, seminar, simulation, low fidelity simulation, high fidelity simulation

Activities	Examination methods	Credit conditions
seminar	test	Test exam
classes	practical examination	Practical exam with simulated scenarios

Entry requirements

First Aid (1st year) - obligatory presence,
First Aid (2nd year) - credit from First Aid (1st year), obligatory presence

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medical Polish

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21, 2021/22, 2022/23, 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0231 Language acquisition	**Standard group** D. Behavioral and social sciences with elements of professionalism

Period Semester 1	**Examination** - **Activities and hours** foreign language course: 60	**Number of ECTS points** 0.0

Period Semester 2	**Examination** credit **Activities and hours** foreign language course: 60	**Number of ECTS points** 5.0

Period Semester 3	**Examination** - **Activities and hours** foreign language course: 60	**Number of ECTS points** 0.0

Period Semester 4	**Examination** credit **Activities and hours** foreign language course: 30	**Number of ECTS points** 4.0

Period Semester 5	**Examination** - **Activities and hours** foreign language course: 60	**Number of ECTS points** 0.0

Period Semester 6	**Examination** credit **Activities and hours** foreign language course: 60	**Number of ECTS points** 5.0

Period Semester 7	**Examination** - **Activities and hours** foreign language course: 30	**Number of ECTS points** 0.0

Period Semester 8	**Examination** examination **Activities and hours** foreign language course: 30	**Number of ECTS points** 4.0

Goals

C1	Development of language competences at the level A1-C1 in terms of: pronunciation, vocabulary, grammar/function and listening ,reading , speaking, writing
C2	Mastering communication strategies especially in terms of communication with the patient
C3	Developing and strengthening the motivation to learn Polish and learning strategies and intercultural awareness, exploring Polish realities
C4	Recognizing and noticing cultural differences and similarities
C5	Intellectual and emotional development

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	written examination, oral examination

W2	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	written examination, oral examination

Calculation of ECTS points

Semester 1

Activity form	**Activity hours***
foreign language course	60
preparation for classes	20
Student workload	**Hours** 80
Workload involving teacher	**Hours** 60

* hour means 45 minutes

Semester 2

Activity form	**Activity hours***
foreign language course	60
preparation for classes	15
preparation for examination	5
Student workload	**Hours** 80
Workload involving teacher	**Hours** 60

* hour means 45 minutes

Semester 3

Activity form	**Activity hours***
foreign language course	60
preparation for classes	10
Student workload	**Hours** 70
Workload involving teacher	**Hours** 60

* hour means 45 minutes

Semester 4

Activity form	Activity hours*
foreign language course	30
preparation for classes	10
preparation for examination	5
Student workload	**Hours** 45
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Semester 5

Activity form	Activity hours*
foreign language course	60
preparation for classes	15
Student workload	**Hours** 75
Workload involving teacher	**Hours** 60

* hour means 45 minutes

Semester 6

Activity form	Activity hours*
foreign language course	60
preparation for classes	15
preparation for examination	5
Student workload	**Hours** 80
Workload involving teacher	**Hours** 60

* hour means 45 minutes

Semester 7

Activity form	Activity hours*

foreign language course	30
preparation for classes	15
preparation for examination	5
Student workload	**Hours** 50
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Semester 8

Activity form	**Activity hours***
foreign language course	30
Student workload	**Hours** 30
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Vocabulary in terme of: man, family, everyday life, leisure time activities, housing, places, means of transport, work, education, nutrition, shopping and services,natural environment, basic human anathomy, health and personal hygiene, diseases, symptoms	W1, W2	foreign language course
2.	Grammar and syntactic problems (inflection, word formation, syntax)	W1, W2	foreign language course
3.	Speaking strategies and communication roles provided for level A1-B2, as appropriate„ according to the: Programy nauczania języka polskiego jako obcego. Poziomy A1-C2” pod red. I. Janowskiej, E. Lipińskiej, A. Rabiej, A. Seretny, P. Turka, Kraków 2011	W1, W2	foreign language course

Course advanced

Semester 1

Teaching methods:

classes / practicals, educational game, language conversation classes, situation method

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 2

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 3

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 4

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 5

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 6

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 7

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

Semester 8

Teaching methods:

textual analysis, classes / practicals, educational game, language conversation classes

Activities	Examination methods	Credit conditions
foreign language course	written examination, oral examination	1. The final grade will be a result of the following scores: 50 % (final test) 30 % (partial tests/midterms) 10 % (attendance) 10 % (class work) Grading scale: 0-59 failed (2.0) 60-67 satisfactory (3.0) 68-75 satisfactory + (3.5) 76-83 good (4.0) 84-91 good + (4.5) 92-100 very good (5.0)

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Health and Safety

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 1022 Occupational health and safety	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 1	credit **Activities and hours** Health and Safety training: 5	0.0

Goals

C1	Anquainting students and doctoral students starting education in doctoral schools with the provisions and principles of safety and hygiene of education on the basis of selected legal provisions
C2	Getting to know the threats to life and health that occur during classes, how to protect against these threats and how to deal with these threats
C3	Informing students and doctoral students starting education in doktoral schools about the principles of fire protection and in particular about how to prevent fires, fire detection systems, fire - fighting equipment and conducting evacuation in the event of fire and other local threats
C4	Introduction to the general principles of fist aid

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	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	test
Skills – Student can:			
U1	identify life-threatening conditions that require immediate medical intervention	O.U2	test
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	test
K2	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	test

Calculation of ECTS points

Activity form	**Activity hours***
Health and Safety training	5
analysis of the research material	3

Student workload	**Hours** 8
Workload involving teacher	**Hours** 5
Practical workload	**Hours** 3

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Module I Selected legal regulations - legal grounds for safety and hygiene of education - rights and obligations of a student and Rector in the field of safety and hygiene of education - basic safety principles applicable to students during classes organized by the University	W1, U1, K1, K2	Health and Safety training
2.	Module I Conditions of safety and hygiene af education in the University's premises - roads and passages - the University's pre,ises - lighting, heating and ventilation - first aid kit - stand equipped with a screen monitor	W1, U1, K1, K2	Health and Safety training

3.	Module I Educational environment facors and their threats and prevention - dangerous factors - harmful factors - arduous factors	W1, U1, K1, K2	Health and Safety training
4.	Module I Accidents to which students may suffer during classes organized by the University - rules of conduct in the event of accidents and in the event of danger and failure	W1, U1, K1, K2	Health and Safety training
5.	Module I Rules of using student houses	W1, U1, K1, K2	Health and Safety training
6.	Module I Rules of first aid - medical rescue system in Poland - first aid in legal acts - survival chain - lifeguard safety - injured party assessment (ABC) and call for help - safe position - cardiopulmonary resuscytation (CPR) - automatic cardiopulmonary resuscytation AED external defibrillator - emergency procedures	W1, U1, K1, K2	Health and Safety training
7.	Module I Fire protection - legal bases for fire protection - duties of the University, students and doctoral students in the field of fire protection - definition of fire - fire groups - causes of fires - ways of fire fighting - fire fighting equipment - rules of use and operation - rules of behavior during a fire - rules of behavior during evacuation	W1, U1, K1, K2	Health and Safety training
8.	Module II Threats of biological agents in the learning environment - personal protective equipment against biological threats - problems of environmental	W1, U1, K1, K2	Health and Safety training
9.	Module III Threats of chemical agents in the learning environment - personal protective equipment against chemical threats - problems of environmental	W1, U1, K1, K2	Health and Safety training

Course advanced

Teaching methods:

e-learning, e-learning, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
Health and Safety training	test	credit - watching and listening to the presentation is the basis for recogizing participation in compulsory training

Entry requirements

attendance at the training is obligatory

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Ethics in Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0223 Philosophy and ethics	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 2	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Enabling students to perceive ethical dimension of medical practice.
C2	Making students acquainted with the main schools of moral thought, typical methods or ethical reasoning and argumentation, and their application to moral deliberations over medical practice.
C3	Prepare students to self-reliant solving moral dilemmas in medical practice based on rational ethical argumentation.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	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	classroom observation, written credit
W2	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation, written credit
W3	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	classroom observation, written credit
W4	patient's rights	D.W17	classroom observation, written credit
W5	standards relating to patients' rights	D.W24	classroom observation, written credit
Skills – Student can:			
U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, written credit
U2	comply with ethical standards in professional activities	D.U13	classroom observation, written credit
U3	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, written credit
U4	follow the patient's rights	D.U15	classroom observation, written credit
U5	recognise and apply measures provided for by law when it is necessary to take medical action without consent or with the use of coercion	D.U20	classroom observation, written credit
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, written credit
K2	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, written credit
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, written credit
K4	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, written credit

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
preparation for classes	20

preparation for colloquium	10
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Why does medicine needs ethics? Moral traditions of medicine and contemporary medical practice	W1	seminar
2.	Basic concepts and theories of moral philosophy and main approaches to medical ethics I: utilitarianism and deontological ethics	W3	seminar
3.	Basic concepts and theories of moral philosophy and main approaches to medical ethics II: virtue ethics, 4 principles theory and moral casuistry	W3	seminar
4.	Basic concepts of ethical considerations: person, human dignity and the value of life	W3	seminar
5.	The problem of patient’s autonomy – it’s sources, extent and limitations	W2, W5, U1	seminar
6.	Theory and practice of informed consent; surrogate consent and treating patients without consent	W2, W4, U1, U4, U5, K2, K4	seminar
7.	Moral quandaries at the beginning of human life	W4, U4, K3	seminar
8.	Ethical assessment of abortion and artificial reproduction	W3, U3, K2	seminar
9.	Ethical controversies surrounding organ transplantations	W3, U3, K2	seminar
10.	Moral significance of new medical technologies – the problem of technological and pharmacological enhancement	W1, U3, K2, K4	seminar
11.	Moral dilemmas at the end of human life I: moral debates on withdrawing and withholding treatment, intensive and palliative care	W2, U1, U3, U5, K1, K2, K4	seminar
12.	Moral dilemmas at the end of human life II: the problem of euthanasia and assisted suicide	W4, K1, K2, K4	seminar
13.	Ethical framework of experimentation on human beings and the limits of scientific progress	W4, U4, K2, K4	seminar
14.	Justice in healthcare – moral dimensions of medical economy	W1, U2, K2, K4	seminar
15.	The physician and the patient – whom they are in clinical encounter nowadays?	W2, U1, U3, K4	seminar

Course advanced

Teaching methods:

case study, textual analysis, discussion

Activities	Examination methods	Credit conditions
seminar	classroom observation, written credit	Active participation in seminars, theoretical colloquium based on case analyses.

Additional info

Up to 2 absences is permitted. Absences should be resumed either by oral consultation or by writing short essay concerning the subject of absence.

Entry requirements

Participation to seminars is obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Genetics with Molecular Biology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, C. Preclinical course
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 2	graded credit **Activities and hours** e-learning: 22, seminar: 6, laboratory: 2	2.0

Goals

C1	Knowledge of biological and molecular basis of inheritance, opportunities to study and modify genetically determined traits and availability of tools and techniques. Basic concepts of medical genetics, genetic diagnostics, patterns of inheritance and genotype - phenotype correlations.
C2	Critical evaluation by students of novel concepts and approaches in genetics and molecular medicine. Practice in presentation of students opinions based on their independent literaturę data analysis.
C3	Learning of the knowledge resources and necessity to sytematically and continously update knowledge in the field of molecular medicine.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	nucleotide functions in the cell, primary and secondary DNA and RNA structures and chromatin structure	B.W13	test
W2	functions of the genome, transcriptome and human proteome, and basic methods used in their examination, processes of DNA replication, repair and recombination, transcription and translation and degradation of DNA, RNA and proteins, as well as concepts for regulation of gene expression	B.W14	test
W3	processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body	B.W18	test
W4	in the basic scope, the subject matter of stem cells and their application in medicine	B.W19	test
W5	the mechanism of the body's aging	B.W23	test
W6	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, test
W7	basic concepts in the field of genetics	C.W1	test
W8	phenomena of gene coupling and interaction	C.W2	test
W9	normal human karyotype and different types of sex determination	C.W3	test
W10	chromosome structure and molecular mutagenic background	C.W4	test
W11	the rules for the inheritance of different numbers of traits, the inheritance of quantitative traits, the independent inheritance of traits and the inheritance of non-nuclear genetic information	C.W5	test
W12	genetic determinants of human blood groups and serological conflict in the Rh system	C.W6	test
W13	aberrations of autosomes and heterosomes that cause disease, including oncogenesis and cancer	C.W7	test
W14	factors influencing the primary and secondary genetic balance of the population	C.W8	test
W15	basics of diagnostics of gene and chromosomal mutations responsible for hereditary and acquired diseases, including neoplastic diseases	C.W9	test
W16	benefits and threats resulting from the presence of genetically modified organisms (GMOs) in the ecosystem	C.W10	test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, test
U2	use on-line photo, audio and video libraries	B.U21	test
U3	use on-line databases of the human genome	B.U23	test
U4	use the Internet databases of genetic disorders	B.U24	classroom observation, test

U5	explain and prioritize differences between prospective and retrospective, randomized and clinical-control studies, case reports and experimental studies according to the reliability and quality of scientific evidence	B.U12	test
U6	analyze genetic crossbreeds and pedigrees of human traits and diseases, and assess the risk of having a child with chromosome aberrations	C.U1	test
U7	make decisions about the need for cytogenetic and molecular tests	C.U3	classroom observation, test
U8	perform morphometric measurements, analyze morphograms and record karyotypes of diseases	C.U4	test
U9	estimate the risk of a given disease becoming apparent in the offspring based on family predisposition and the influence of environmental factors	C.U5	test
U10	assess environmental hazards and use basic methods to detect the presence of harmful (biological and chemical) factors in the biosphere	C.U6	test
Social competences – Student is ready to:			
K1	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, test
K2	use objective sources of information	O.K7	classroom observation, test

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	22
seminar	6
laboratory	2
preparation for classes	6
conducting literature research	6
kształcenie samodzielne	8
participation in examination	2
Student workload	**Hours** 52
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Function of human genome, transcriptome and proteome and methods to study them. Mechanisms of replication, repair and recombination of DNA. Transcription, translation and degradation of DNA, RNA and proteins. Basic concepts in genetics: linkage and association. Inheritance of quantitative and qualitative traits. Independent segregation of traits and extranuclear genetics.	W1, W12, W2, W7, U3, U4, U6, U8, U9	seminar, e-learning, laboratory
2.	Basic methods of genetic diagnostics: mutations and chromosomal aberrations. Impact on inherited and acquired disorders. The normal human karyotype and the most common chromosomal aberrations.	W10, W11, W13, W14, W15, W6, W8, W9, U1, U2, U4, U7, U9	seminar, e-learning
3.	Cell cycle and the control of genetic expression. Mechanisms of genes regulation. Basic knowledge on stem cells and the use in medicine.	W3, W4, W5, U1, U5, K2	seminar, e-learning
4.	Genetic equilibrium of population, primary and secondary factors impacting the genetic pool. Theoretical risks for genetic traits based on patterns of inheritance and genetic crossings. Measures of genetic association: odds ratio and relative risk.	W14, W6, U1, U5, K1	seminar, e-learning, laboratory
5.	Benefits and risk of the presence of genetically modified organisms in the ecosystem. Genetic mechanisms of acquired ddrug resistance by microorganisms and cancerous cells.	W16, W2, U10, U2, K2	seminar, e-learning

Course advanced

Teaching methods:

laboratories (labs), discussion, case study method, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	test	Lab practicals (each student comes once) and seminars – attendance will be checked
seminar	test	A multiple choice test, threshold calculated on the performance of whole class
laboratory	classroom observation	

Additional info

Students are requested to sign in to ClinicalKey Student, available through the link at www.bm.cm.uj.edu.pl

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Patient Care - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2020/21
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group** I. Professional practice

Period	**Examination**	**Number of ECTS points**
Semester 2	credit **Activities and hours** professional practice: 120	4.0

Goals

C1	The aim of the internship is to familiarize the student with the work of hospital departments, in particular with the full range of nursing activities related to patient service as well as administrative and general office activities.

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	booklet of practice
Skills – Student can:			

U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practice
U2	communicate and share knowledge with colleagues in a team	O.U8	booklet of practice
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

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	120
Student workload	**Hours** 120
Workload involving teacher	**Hours** 120
Practical workload	**Hours** 120

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	During the internship, students should acquire the following skills: In the field of patient service: a) ability to prepare and perform intramuscular injections, and subcutaneous injections; b) ability to prepare intravenous drip; c) principles of feeding the sick; d) the principles of anti-bedsore prophylaxis and the principles of pressure ulcer treatment; e) help in dispensing medicines and minor procedures (e.g. changing dressings); f) help in providing sanitary and hygienic services to patients. g) assisting in examining patients. h) a first-year student during the internship has the right to collect and establish venous blood venflon to the peripheral vein. In terms of administrative and cleaning activities: a / learning the structure of the hospital and ward; b / becoming familiar with the scope of duties of nursing staff; b / learning about administrative tasks related to patient service c / keeping medical records (e.g. departmental book patient movement, register of hospital infections, register invasive procedures, receptors)	W1, U1, U2, K1, K2, K3, K4, K5, K6	professional practice

Course advanced

Teaching methods:

professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practice, classroom observation	The function of head of the practice is performed by a doctor appointed by the head of the clinic / head of the department. The head of the internship is responsible for the implementation of the internship program and includes completing the internship by placing an appropriate entry in the index and signing the internship confirmation. The condition of getting credit is acquiring the skills listed in the detailed internship program. The student is directly supervised by a nurse appointed by the head of the clinic / head of the department.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Laboratory Diagnostics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22, 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 3	credit **Activities and hours** e-learning: 4, seminar: 12, classes: 24	2.0

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	examination **Activities and hours** e-learning: 6, seminar: 20	2.0

Goals

G1	Transfer of knowledge about how the laboratory works, what are the possibilities and limitations of laboratory diagnostics.
G2	To familiarize students with the principles of collecting biological material for laboratory tests, and with factors affecting the course of the analytical process and the result of the test.
G3	To familiarize students with laboratory diagnostic algorithms in diagnosing and differentiating and treatment monitoring of organ and systemic disorders.
G4	Transfer of knowledge regarding the correct interpretation of laboratory test results useful in the diagnosis of diseases.
G5	To familiarize students with the principles of cooperation of a doctor with diagnostic laboratory.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, test

W2	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.W7	test
W3	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	test
W4	theoretical and practical basics of laboratory diagnostics	E.W40	test
W5	possibilities and limitations of laboratory tests in emergency situations	E.W41	test

W6	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	E.W3	test
W7	basic methods of fetal diagnostics and therapy	E.W5	test
W8	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	E.W14	test
W9	basics of early detection of neoplastic diseases and principles of screening in oncology	E.W24	test
W10	causes, symptoms, principles of diagnosis, therapeutic and prophylactic management in the most common bacterial, viral, parasitic and fungal diseases, including pneumococcal infections, viral hepatitis, acquired immunodeficiency syndrome (AIDS), sepsis and hospital infections	E.W34	test
W11	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases and specific problems in the practice of a family physician	E.W38	classroom observation, test

W12	principles of diagnostics of infectious diseases and can interpret the results	E.W52	test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, test
U2	perform differential diagnosis of the most common diseases of adults and children	E.U12	classroom observation, test
U3	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	classroom observation, test
U4	collect and retain test material for use in laboratory diagnostics	E.U28	classroom observation, test
U5	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, test
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K2	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

Calculation of ECTS points

Semester 3

Activity form	**Activity hours***
e-learning	4
seminar	12
classes	24
preparation for classes	12
preparation for colloquium	12
Student workload	**Hours** 64
Workload involving teacher	**Hours** 40
Practical workload	**Hours** 24

* hour means 45 minutes

Semester 5, Semester 6

Activity form	**Activity hours***

e-learning	6
seminar	20
preparation for classes	10
preparation for examination	19
participation in examination	1

Student workload	**Hours** 56
Workload involving teacher	**Hours** 26

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	2nd year, 3rd semester	W1, W2, W3, W4, W5, W6, W8, U1, U2, U3, U4, K1, K2	classes, seminar, e-learning
2.	Laboratory tests in the diagnostic process. Diagnostic characteristics of the test. Analytical characteristics of the laboratory method – limit of detection and quantification, linearity, measurable range. Causes of error affecting the result of the laboratory test - pre-laboratory factors and analytical variability.	W1, W4	e-learning
3.	Laboratory tests in life-threatening states. Point-of-care testing.	W4, W5	e-learning
4.	Causes and types of error affecting the result of laboratory testing. Determining the magnitude of the error.	W4, U3	seminar
5.	Principles of doctor's cooperation with the diagnostic laboratory. Complete blood count - methodology and diagnostic significance.	W1, W2, U4, K2	seminar
6.	Interpretation of complete blood count results - case studies and laboratory results with discussion.	W2, W3, U3	seminar
7.	Laboratory diagnostics in hematology - anemia and proliferative diseases.	W2, U1, U3	seminar
8.	Standard urine analysis - methodology and diagnostic significance.	W2, W3, U3, U4, K1	seminar
9.	Clinical biochemistry of kidney diseases.	W1, W2, U3, K2	seminar
10.	Calculating the value of diagnostic characteristics parameters of the test and assessing its usefulness in the diagnostic process – case studies.	W4, U3, K1	seminar
11.	Testing of water-electrolyte metabolism and and acid-base balance. Methodology, disturbing factors.	W2, W5, U1, K2	seminar

12.	Diagnostics of blood coagulation and fibrinolysis disorders.	W2, U1, K2	seminar
13.	Laboratory diagnosis of immune system diseases.	W1, W2, U1	seminar
14.	Laboratory diagnostics of pancreas and gastrointestinal diseases.	W2, U1, U2, K2	seminar
15.	Diagnostics of calcium-phosphate metabolism disorders.	W2, U1, U3	seminar
16.	Rules for collecting material for laboratory tests. Interpretation of test results taking into account bias and random error.	W3, W4, U4, K1	classes
17.	Complete blood count - methodology and diagnostic significance.	W2, W4, U1	classes
18.	Laboratory classes in the CBC laboratory of the University Hospital Diagnostics Department. Presentation of diagnostic methods and hematological analyzers.	W4, U3, K2	classes
19.	Laboratory diagnostics in hematology - interpretation of laboratory test results, clinical case studies.	W1, U3, K2	classes
20.	Interpretation of standard urine analysis results - clinical case studies. Laboratory classes in the clinical analytics laboratory of the University Hospital Diagnostics Department, presentation of analytical methods and urine analyzers.	W2, U3, K2	classes
21.	Laboratory assessment of kidney function - interpretation of results, clinical case studies.	W2, U3, U5	classes
22.	Analytical examinations of cerebrospinal fluid, body cavity fluids, feces. Laboratory classes in in the clinical analytics laboratory of the University Hospital Diagnostics Department.	W8, U2, U4	classes
23.	Interpretation of water-electrolyte and acid-base disorders - clinical case studies. Presentation of analytical methods, and electrolyte and acid-base analyzers in the University Hospital Diagnostics Department.	W2, U1, U3, K2	classes
24.	Interpretation of coagulation and fibrinolysis test results - clinical case studies. Presentation of analytical methods and coagulation analyzers at the University Hospital Diagnostics Department.	W2, U2, U3, K2	classes
25.	Interpretation of laboratory test results in immune system diseases - clinical case studies.	W6, U1, U3, K2	classes
26.	Laboratory diagnostics of pancreas and gastrointestinal diseases - interpretation of laboratory test results, clinical case studies.	W6, U3, K1	classes
27.	Diagnostics of calcium-phosphate metabolism disorders - interpretation of laboratory test results, clinical case studies.	W2, U2, U3, K2	classes
28.	3rd year, 5th semester	W1, W10, W11, W12, W2, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, K2	seminar, e-learning

29.	Diagnostics of civilization diseases - the use of laboratory tests to assess the risk for obesity complications, cardiovascular risk and metabolic syndrome.	W1, W11, W2	e-learning
30.	Laboratory tests in preventive medicine.	W1, W11, W2, W9	e-learning
31.	Personalized medicine - the use of genetic testing.	W1, W6, U5, K2	e-learning
32.	Clinical biochemistry and laboratory diagnostics of carbohydrate metabolism disorders.	W1, W11, W2, W6, U2, U3, U5	seminar
33.	Clinical biochemistry and laboratory diagnostics of lipid metabolism disorders. Clinical case studies, discussion about laboratory diagnostic strategies and interpretation of laboratory tests results.	W1, W11, W2, U3, U5, K2	seminar
34.	Laboratory diagnosis of cardiovascular diseases. Clinical case studies. Laboratory diagnostic strategies and interpreting laboratory test results.	W1, W2, W5, U2, U3, U4, U5, K2	seminar
35.	Laboratory diagnostics of liver diseases. Clinical case studies. Laboratory diagnostic strategies and interpreting laboratory test results.	W1, W10, W11, W12, W2, U1, U2, U3, K2	seminar
36.	Laboratory diagnostics of endocrine diseases. Clinical case studies discussing laboratory diagnostic strategies and interpreting laboratory test results.	W11, W2, W6, U2, U3, U5	seminar
37.	Laboratory diagnostics of malignancies - tumor markers. Clinical, case studies discussing laboratory diagnostic strategies and interpreting laboratory results.	W1, W2, W9, U2, U3, U5, K2	seminar
38.	Diagnosis of trace elements and vitamins deficiencies. Clinical case studies discussing laboratory diagnostic strategies and interpreting laboratory results.	W2, W6, U1, U3, K2	seminar
39.	Laboratory diagnostics of primary and secondary hypertension. Clinical case studies discussing laboratory diagnostic strategies and interpreting laboratory results.	W11, W2, U1, U3	seminar
40.	Laboratory tests in gynecology and obstetrics. Clinical case studies discussing laboratory diagnostic strategies and interpreting laboratory results.	W12, W2, W7, U1, U3, U5, K2	seminar
41.	Laboratory diagnostics of nervous system diseases. Clinical case studies discussing laboratory diagnostic strategies and interpreting laboratory results.	W2, W6, W8, U1, U2, U3, K2	seminar

Course advanced

Semester 3

Teaching methods:

case study, classes / practicals, laboratories (labs), e-learning, problem solving method, case study method, group work, seminar

Activities	Examination methods	Credit conditions
e-learning	test	To pass classes in the form of e-learning, it is necessary to familiarize with the presented materials and correctly answer test questions on the e-learning platform.

Activities	Examination methods	Credit conditions
seminar	test	Students receive points for each seminar on the basis of a written test - to be admitted to the final test it is required to pass seminars with at least 60% of the maximum number of points. In the case of a smaller number of points scored, the student proceeds to the test, the completion of which determines the possibility of taking the final test. A minimum of 60% of correct answers in the final test are required to pass. Based on the results of the final test and points obtained during the seminars, a grade is awarded.
classes	classroom observation, test	Observation and assessment of student work. Active student participation in classes required. Obtaining at least 60% of the maximum number of points from the tests during classes.

Semester 5, Semester 6

Teaching methods:

case study, laboratories (labs), e-learning, problem solving method, case study method, situation method, presentation, seminar

Activities	Examination methods	Credit conditions
e-learning	test	To pass classes in the form of e-learning, it is necessary to familiarize with the presented materials and correctly answer test questions on the e-learning platform.
seminar	classroom observation, test	Observation and assessment of student work. Students receive points for each seminar on the basis of a written test - to be admitted to the final test it is required to pass seminars with at least 60% of the maximum number of points. In the case of a smaller number of points scored, the student proceeds to the test, the completion of which determines the possibility of taking the final test. A minimum of 60% of correct answers in the final test are required to pass. Based on the results of the final test and points obtained during the seminars, a grade is awarded.

Additional info

Entry requirements

Only students who completed the first part of the laboratory diagnostics course in the 3rd semester can join the laboratory diagnostics classes in the 5th semester. Repetition of the course means the necessity to participate again all classes and credits. In justified cases, however, it is possible to be released from participation in part or the whole course by the Course Coordinator.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Laboratory Training of Clinical Skills

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22, 2022/23, 2023/24, 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard groups** D. Behavioral and social sciences with elements of professionalism, E. Clinical non-procedural medical disciplines, F. Clinical procedural sciences
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 3	credit **Activities and hours** simulations: 39	2.0

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** classes: 18, e-learning: 12	2.0

Period	**Examination**	**Number of ECTS points**
Semester 8	credit **Activities and hours** classes: 32	1.0

Periods	Examination	Number of ECTS points
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 22, simulations: 22	1.0

Goals

C1	1/4 - To provide the student with knowledge about the obtaining of medical history, biomedical part as well as communication skills and techniques. Shaping and strengthening the patient-centered attitude. Developing the student's physical examination skills, including breast and per rectum examination. Preparing the student for clinical classes. 2/4 - Learn how to effectively communicate information, including obtaining informed consent and the process of involving the patient in making health decisions. 3/4 - Learning to cope with difficult communication situations (e.g. passing unsuccessful information, dealing with patient expectations, aggressive behavior) 4/4 - Teaching teamwork, team management in crisis situations, practical application of communication skills in simulated clinical scenarios.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	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	classroom observation
W2	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation
W3	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	classroom observation
W4	the role of the patient's family in the treatment process	D.W10	classroom observation
W5	forms of violence, models explaining domestic and institutional violence, the social determinants of the various forms of violence and the role of the doctor in recognizing it	D.W3	classroom observation
W6	basic psychological mechanisms of human functioning in health and disease	D.W9	classroom observation
W7	principles of teamwork	D.W18	classroom observation
W8	principles of motivating the patient to health-promoting behaviors and informing about unsuccessful prognosis	D.W15	classroom observation
W9	guidelines for cardiopulmonary resuscitation of newborns, children and adults	F.W7	classroom observation
W10	the principles of health promotion, its tasks and main lines of action, with particular reference to the role of elements of a healthy lifestyle	D.W14	classroom observation
Skills – Student can:			

U1	identify medical problems and prioritize medical management	O.U1	classroom observation
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation
U3	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation
U5	inspire the learning process of others	O.U6	classroom observation
U6	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U7	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U8	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation
U9	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	classroom observation
U10	talk to the adult patient, child and family using active listening and empathy techniques and talk to the patient about his or her life situation	D.U5	classroom observation
U11	inform the patient about the purpose, course and possible risks of the proposed diagnostic or therapeutic measures, and obtain his or her informed consent to take these measures	D.U6	classroom observation
U12	involve the patient in the therapeutic process	D.U7	classroom observation
U13	provide the patient and his or her family with information about unfavorable prognosis	D.U8	classroom observation
U14	provide advice on therapeutic recommendation compliance and following healthy lifestyle	D.U9	classroom observation
U15	communicate with colleagues with constructive feedback and support	D.U12	classroom observation
U16	apply basic psychological motivational and supportive interventions	D.U11	classroom observation
U17	follow the patient's rights	D.U15	classroom observation
U18	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	classroom observation
U19	identify risk factors for violence, recognize violence and respond accordingly	D.U10	classroom observation
U20	carry out a medical history with an adult patient	E.U1	OSCE examination
U21	conduct a full and targeted physical examination of an adult patient	E.U3	OSCE examination
U22	conduct an approximate hearing and field of vision examination, and an otoscopic examination	E.U6	OSCE examination
U23	assess the general condition, state of consciousness and awareness of the patient	E.U7	classroom observation

U24	recognize immediate life-threatening conditions	E.U14	classroom observation
U25	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation
U26	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	classroom observation
U27	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	test
U28	plan specialist consultations	E.U32	classroom observation
U29	maintain patient's medical records	E.U38	classroom observation
U30	examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination	F.U6	OSCE examination
U31	operate according to the algorithm of advanced resuscitation activities	F.U11	classroom observation
U32	perform ophthalmic screening tests	F.U19	OSCE examination
U33	conduct an approximate hearing test	F.U26	OSCE examination
U34	insert a catheter into the bladder	F.U32	OSCE examination
U35	to take the informed and legally effective consent: a) for high-risk diagnostic procedures (e.g. gastroscopy, colonoscopy), endoscopic retrograde cholangiopancreatography) b) for high-risk diagnostic procedures (transcutaneous biopsy under control) USG) c) surgery to remove the gallbladder	F.U33	classroom observation
U36	to pass on information about the death of a close friend and relative	F.U34	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	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	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	formulate conclusions from own measurements or observations	O.K8	classroom observation
K6	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
K7	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

Calculation of ECTS points

Semester 3

Activity form	**Activity hours***
simulations	39
preparation for classes	5
Student workload	**Hours** 44
Workload involving teacher	**Hours** 39
Practical workload	**Hours** 39

* hour means 45 minutes

Semester 5, Semester 6

Activity form	**Activity hours***
classes	18
e-learning	12
preparation for classes	10
Student workload	**Hours** 40
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 18

* hour means 45 minutes

Semester 8

Activity form	**Activity hours***

classes	32
preparation for classes	10

Student workload	**Hours** 42
Workload involving teacher	**Hours** 32
Practical workload	**Hours** 32

* hour means 45 minutes

Semester 9, Semester 10

Activity form	**Activity hours***
e-learning	22
simulations	22
preparation for classes	5

Student workload	**Hours** 49
Workload involving teacher	**Hours** 44
Practical workload	**Hours** 22

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Learning history taking skills. The biomedical part of the history taking. Patient goals identification, screening, summary (and reporting), opened and closed questions (SOCRATES) - exercises using interviews prepared by students. Communication skills: clarifications, signposts, hidden non-verbal cues. Patient's perspective. Improving clinical examination skills. Building a patient-oriented attitude. Head and neck examination. Examination of pupil reaction to light. Reed tests, otoscope and ophthalmoscope examination. Chest examination, lung examination. Listening to lung sounds on the simulator. Learning to examine the heart. Learning to examine peripheral cardiovascular system. Listening to heart sounds and murmurs on the simulator. Learning to exam the abdomen. Learning per rectum examination. Oncological examination. Breast examination. Prostate examination. Neurological examination. Motion system examination. Bladder catheterization skill.	W2, W3, U10, U15, U17, U20, U21, U22, U23, U29, U30, U32, U33, U34, U5, U6, U7, U9, K3, K6	classes, simulations
2.	5th semester. Skills in providing effective information, including obtaining informed consent. Involving the patient in the health decision-making process. Motivating to comply with the recommendations. Basic rules for ECG interpretation.	W10, W2, W3, W4, W6, W8, U11, U12, U14, U16, U17, U35, U5, U6, U8, U9, K1, K2, K3, K4, K5, K7	e-learning, simulations
3.	8th semester. Students will practice the skills of conducting medical consultation regarding intimate topics, dealing with patient expectations and aggression, as well as the ability to convey unsuccessful information.	W2, W3, W4, W6, U10, U11, U12, U13, U16, U17, U36, U6, U8, U9, K1, K2, K3, K4, K5, K7	simulations
4.	10th semester Patient turn over using SBAR formula. Non-technical skills in the team. Providing unfavorable information. Communication techniques in collecting an interview. Management of aggression. Management of suspected domestic violence. Verbal and non-verbal communication to patient and team.	W1, W2, W3, W4, W5, W7, W8, W9, U1, U10, U11, U12, U13, U15, U17, U18, U19, U2, U20, U21, U24, U25, U26, U27, U28, U3, U31, U34, U35, U36, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	e-learning, simulations

Course advanced

Semester 3

Teaching methods:

brainstorm, classes in clinical skills room, demonstration, discussion, OSCE examination, educational film, presentation, simulation, low fidelity simulation, virtual patient

Activities	Examination methods	Credit conditions
simulations	OSCE examination	Objective Standardized Clinical Exam (OSCE) - 5 stations. Stations: 1. 10-minute, medical history 2. 5-minute, simulator (lung and heart sound interpretation). 3. Physical examination 1 4. Physical examination 2 5. Physical examination 3 Physical examination stations also include: rectal and prostate exams on the trainer, breasts examination on the trainer, investigations using an ophthalmoscope, otoscope, neurological hammers, and tuning fork, bladder catheterization and IV catheterization on the trainer. Conditions for obtaining credit at the OSCE: - positive passing of the interview station (both checklist and global rating) - positive passing of at least 3 out of 4 remaining stations.

Semester 5, Semester 6

Teaching methods:

demonstration, discussion, e-learning, educational film, simulation, high fidelity simulation

Activities	Examination methods	Credit conditions
classes	classroom observation	Continuous assessment during classes At least one-time participation in a role play with a simulated patient.
e-learning	classroom observation	The separate test form for each ECG lesson. The test consists of two parts: theoretical and practical. Completing the theoretical part involves solving the single-choice test on the theoretical basis of the discussed issue (5 questions). The practical part consists of solving the multiple-choice test on the interpretation of the given ECG (1 multiple-choice question). Pass requirements, obtain a total of at least 50% of the points.

Semester 8

Teaching methods:

demonstration, discussion, simulation, simulated patient

Activities	Examination methods	Credit conditions
classes	classroom observation	Continuous assessment during classes At least one-time participation in a role play with a simulated patient.

Semester 9, Semester 10

Teaching methods:

e-learning, high fidelity simulation, simulated patient

Activities	Examination methods	Credit conditions
e-learning	test	The separate test form for each ECG lesson. The test consists of two parts: theoretical and practical. Completing the theoretical part involves solving the single-choice test on the theoretical basis of the discussed issue (5 questions). The practical part consists of solving the multiple-choice test on the interpretation of the given ECG (1 multiple-choice question). Pass requirements, obtain a total of at least 50% of the points.

Activities	Examination methods	Credit conditions
simulations	classroom observation	Acting as team leader and team member during simulated scenarios.

Entry requirements

1/4 - Knowledge of normal anatomy and human physiology.
2/4 - Knowledge of normal anatomy, human physiology and the basics of pathology. Student passed the subject Laboratory Training of Clinical Skills for year 2 and passed the OSCE exam year 2. Student already have contact with patients during clinical classess.
3/4 - Completed subjects Laboratory Training of Clinical Skills for year 2 and 3.
4/4 - Subjects passed for the year IV: Internal diseases , Surgery, Pediatrics, Anesthesiology and intensive care, Pharmacology, Laboratory Teaching Clinical Skills.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Pathology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 3	- **Activities and hours** classes: 54, seminar: 38, dissection classes: 4, e-learning: 15	0.0

Period	**Examination**	**Number of ECTS points**
Semester 4	examination **Activities and hours** e-learning: 14, classes: 54, seminar: 38, dissection classes: 4	15.0

Goals

C1	The educational goal is knowing and understaniding etiology, pathogenesis and symptoms of selected human diseases and ability to correlate pathomechanisms of a disease with both gross and microscocpic morphological features.
C2	After the course a student should be able to link images of tissue and organ damage with clinical signs of disease, history and results of laboratory tests, to place properly histopathologic examination in diagnostic ladder and to plan the diagnostic procedure and interpret its results,

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	pathomorphological nomenclature	C.W26	classroom observation, multiple choice test
W2	basic mechanisms of cell and tissue damage	C.W27	classroom observation, multiple choice test
W3	clinical course of specific and non-specific inflammations, as well as tissue and organ regeneration processes	C.W28	classroom observation, multiple choice test
W4	definition and pathophysiology of shock, with particular emphasis on differentiation of the causes of shock and multi-organ failure	C.W29	classroom observation, multiple choice test
W5	aetiology of haemodynamic disorders, regressive and progressive changes	C.W30	classroom observation, multiple choice test
W6	issues related to detailed pathology of organs, macro- and microscopic images and clinical course of pathomorphological changes in particular organs	C.W31	classroom observation, multiple choice test
W7	consequences of developing pathological changes for topographically adjacent organs	C.W32	classroom observation, multiple choice test
W8	external and internal pathogens, both modifiable and non-modifiable	C.W33	classroom observation, multiple choice test
W9	clinical forms of the most frequent diseases of particular systems and organs, metabolic diseases and disorders of water-electrolyte, hormonal and acid-base metabolism	C.W34	classroom observation, multiple choice test
W10	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	classroom observation, multiple choice test
W11	the consequences of vitamin or mineral deficiencies and their excess in the body	C.W48	classroom observation, multiple choice test
W12	influence of oxidative stress on cells and its importance in the pathogenesis of diseases and aging processes	C.W47	classroom observation, multiple choice test
W13	enzymes involved in digestion, the mechanism of hydrochloric acid production in the stomach, the role of bile, the course of absorption of digestive products	C.W49	classroom observation, multiple choice test
W14	the mechanism of hormone actions	C.W51	classroom observation, multiple choice test
W15	pre-cancerous and high-risk conditions related to cancer, neoplastic transformation processes with their morphological signs, principles of cancer classification according to WHO, the most important risk factors, prognostic and predictive, and methods of histopathological and cytological testing and supporting molecular tests used in cancer diagnosis, detection and monitoring pre-cancerous conditions, and also understands the importance of proper diagnosis of histopathology cancer for proper treatment	C.W53	classroom observation, multiple choice test

W16	pathogenesis and morphological changes of diseases associated with advanced age, including those particularly important in an aging society, the most frequent neurodegenerative diseases (e.g. Alzheimer's disease)	C.W54	classroom observation, multiple choice test
W17	morphological changes, and understands the pathogenesis of critical pathological conditions brain such as swelling, ischemia, hemorrhages, effects of exogenous substances (e.g. alcohol, CO) and mechanical injury	C.W55	classroom observation, multiple choice test
W18	the importance of post-mortem examination as an examination verifying the diagnosis and important for improving the quality of hospital work and for the self-education of a doctor, and this knowledge is supported by direct, i.e. personal active participation in autopsy	C.W57	classroom observation, multiple choice test
W19	the subject of basic (including histochemistry and immunohistochemistry) techniques used in pathomorphological diagnostics and selected molecular techniques (FISH, etc.), and understands their determinants related to the protection of material, and knows the rules of evaluation and interpretation of macro- and microscopic material to be examined	C.W58	classroom observation, multiple choice test
W20	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	classroom observation, multiple choice test
W21	morphological changes in the most common pathologies of the pediatric period, including in particular perinatal pathologies and genetic diseases and developmental disorders (defects) in children, and is able to link them with teratogenic, genetic factors and perinatal trauma	C.W56	classroom observation, multiple choice test
W22	development, structure and functions of the human body in normal and pathological conditions	O.W1	classroom observation, multiple choice test
W23	symptoms and course of diseases	O.W2	classroom observation, multiple choice test
W24	the consequences of human body exposure to various chemical and biological agents and the principles of prevention	C.W15	classroom observation, multiple choice test
W25	types of hypersensitivity reactions, types of immunodeficiency and basicss of immunomodulation	C.W23	classroom observation, multiple choice test
Skills – Student can:			
U1	link images of tissue and organ damage with clinical signs of disease, history and results of laboratory tests	C.U11	classroom observation, multiple choice test
U2	analyze reaction, defense and adaptation phenomena and regulatory disturbances caused by an etiological factor	C.U12	classroom observation, multiple choice test

U3	use the antigen-antibody reaction in current modifications and techniques for the diagnosis of infectious, allergic, autoimmune and neoplastic diseases and blood diseases	C.U8	classroom observation, multiple choice test
U4	identify medical problems and prioritize medical management	O.U1	classroom observation, multiple choice test
U5	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation, multiple choice test
U6	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, multiple choice test
U7	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation
U8	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation
U9	inspire the learning process of others	O.U6	classroom observation
U10	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K2	use objective sources of information	O.K7	classroom observation
K3	promote health-promoting behaviors	O.K6	classroom observation
K4	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Semester 3

Activity form	**Activity hours***
classes	54
seminar	38
dissection classes	4
e-learning	15
preparation for classes	96
preparation for colloquium	13
Student workload	**Hours** 220
Workload involving teacher	**Hours** 111

Practical workload	**Hours** 58

* hour means 45 minutes

Semester 4

Activity form	**Activity hours***
e-learning	14
classes	54
seminar	38
dissection classes	4
preparation for classes	60
preparation for examination	30
preparation for colloquium	30

Student workload	**Hours** 230
Workload involving teacher	**Hours** 110
Practical workload	**Hours** 58

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Introductory topics. Basic concepts of pathology.	W1, W15, W16, W18, W19, W2, W21, W6, W7, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	seminar, dissection classes
2.	Types of necrosis. Adaptations and degenerative changes	W1, W15, W18, W6, W7, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
3.	Hemodynamic disorders (congestion, oedema, thrombosis,etc)	W1, W2, W6, W7, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes

4.	Morphology of inflammation	W1, W10, W19, W2, W20, W3, W6, W7, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
5.	Neoplasms – epidemiology, carcinogenesis, nomenclature	W1, W13, W14, W15, W19, W2, W3, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes, e-learning
6.	Infectious dieases	W1, W10, W13, W14, W15, W19, W2, W20, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	e-learning
7.	Immunopathology	W1, W14, W15, W16, W17, W19, W2, W21, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	e-learning
8.	Hematopathology – myelogenous neoplasms, thymus pathology part I	W1, W10, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	e-learning
9.	Pediatric pathology, selected genetic diseases etc	W1, W11, W14, W15, W16, W19, W2, W20, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
10.	Blood vessels pathology	W1, W15, W16, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
11.	Heart pathology (cardiomyopathies, infarction, etc)	W1, W15, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	e-learning
12.	Hematopathology – myelogenous neoplasms, thymus pathology part II	W1, W14, W15, W16, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	e-learning
13.	Head and neck pathology	W1, W10, W11, W12, W13, W14, W16, W19, W2, W20, W6, W7, W8, W9	classes
14.	Oesophagus and stomach	W1, W14, W2, W4, W5, W6, W7, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes

15.	Pulmonary pathology	W1, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
16.	Hematopathology- lymphomas	W1, W15, W18, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
17.	Female genital tract	W1, W15, W19, W2, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
18.	Kidney pathology	W1, W10, W15, W19, W2, W20, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
19.	Small and large intestine	W1, W10, W12, W15, W19, W2, W20, W3, W4, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
20.	Liver and gallbladder	W1, W10, W12, W15, W19, W2, W20, W3, W4, W5, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
21.	Lower urinary tract	W1, W15, W16, W19, W2, W20, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
22.	Pancreas	W1, W10, W11, W14, W15, W17, W18, W19, W2, W21, W5, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
23.	Male genital tract	W1, W15, W2, W20, W3, W6, W7, W8, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
24.	Eye and ear pathology	W1, W12, W14, W15, W16, W19, W2, W20, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes, e-learning

25.	Endocrine pathology	W1, W10, W11, W14, W15, W16, W19, W2, W20, W3, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
26.	Breast pathology	W1, W15, W19, W3, W6, W7, W8, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
27.	Dermathopathology	W1, W11, W14, W15, W19, W2, W20, W3, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
28.	Bones and joints	W1, W10, W11, W15, W16, W17, W18, W19, W2, W20, W21, W3, W4, W5, W6, W7, W8, W9, U1, U10, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes
29.	Neuropathology	W11, W2, W22, W23, W24, W25, W8, U1, U2, K1, K2	classes
30.	Soft tissue tumours	W10, W2, W22, W23, W24, W4, W5, W6, W8, U1, U2, K1, K2	classes

Course advanced

Semester 3

Teaching methods:

case study, brainstorm, classes / practicals, laboratories (labs), dissection classes, preclinical classes, demonstration, discussion, e-learning, educational film, case study method, presentation, group work, trip, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
classes	multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
seminar	classroom observation, multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
dissection classes	classroom observation, multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
e-learning	classroom observation	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)

Semester 4

Teaching methods:

case study, classes / practicals, laboratories (labs), dissection classes, preclinical classes, demonstration, discussion, e-learning, educational film, case study method, presentation, group work, seminar, trip, lecture

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
classes	classroom observation, multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
seminar	classroom observation, multiple choice test	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)
dissection classes	classroom observation	1st and 2nd mid-term MCQs tests (credit> 50% of the total points from both tests). Final exam – MCQs test (credit> 50% points)

Additional info

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Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medical Psychology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0313 Psychology	**Standard group** D. Behavioral and social sciences with elements of professionalism

Period	**Examination**	**Number of ECTS points**
Semester 3	graded credit **Activities and hours** seminar: 45	2.0

Goals

C1	Knowledge, gainnig skills to recognize basic psychological mechanisms of human functioning specifically in medical context. Understanding patient and his family in contexst of health, illness and treatment process.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	assignment report

W2	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation, assignment report
W3	psychosocial consequences of hospitalization and chronic disease	D.W7	assignment report
W4	basic psychological mechanisms of human functioning in health and disease	D.W9	assignment report
W5	the role of the patient's family in the treatment process	D.W10	assignment report
W6	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	D.W11	assignment report
W7	the role of stress in etiopathogenesis and disease progression, and the mechanisms for coping with stress	D.W12	assignment report
W8	mechanisms, objectives and treatment options for psychoactive substance dependence	D.W13	assignment report
Skills – Student can:			
U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, assignment report
U2	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	classroom observation, assignment report
U3	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	classroom observation
Social competences – Student is ready to:			
K1	promote health-promoting behaviors	O.K6	classroom observation, assignment report
K2	to be guided by the well-being of a patient	O.K2	classroom observation, assignment report

Calculation of ECTS points

Activity form	**Activity hours***
seminar	45
preparation for classes	4
preparation of a paper	5
preparation of multimedia presentation	6

Student workload	**Hours** 60
Workload involving teacher	**Hours** 45

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Introduction to medical psychology	W1, U2, K1, K2	seminar
2.	Stress coping mechanisms	W4, W7, U2, K1, K2	seminar
3.	Human developement 1 the begining of life : pregnancy,through preschool	W4, W5, U3, K1, K2	seminar
4.	Human developement 2 school age, adolescence adulthood	W2, W4, U1, K1, K2	seminar
5.	Family system and illness	W1, W2, W5, W6, U1, U2, K1, K2	seminar
6.	Terminal illness adaptation	W3, W4, W5, W6, U1, U2, U3, K1, K2	seminar
7.	Death, grief, berevement ; family perspective, medical perspective	W2, W3, W5, W6, U1, U2, U3, K1, K2	seminar
8.	Psychosomatic medicine	W2, W4, U1, U2, U3, K1, K2	seminar
9.	Substancje abuse	W4, W8, U2, U3, K1, K2	seminar
10.	Psychological theories defence mechanisms	W4, U2, U3, K1, K2	seminar
11.	Communication ; verbal non-verbal	W2, U1, U2, U3, K1, K2	seminar
12.	The physician - patient relationship	W2, U1, U2, U3, K1, K2	seminar
13.	Biopsychosocial approach in medicine	W1, W2, W3, W5, W7, U1, U2, U3, K1, K2	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, discussion, case study method, group work, seminar, simulation, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, assignment report	The course is assesed on the basis of personal activity and engagement as well as attendence, presentation and essay

Additional info

Specifically valuablle activities of student during seminar:
engagement in disciusion
engagement in analizing case studies
understanding psychological mechanisms of patients and families
understanding one owns emotional proceses trigerd in relationship with patients
preparation of strategies involving psychological help for patients when needed

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medical Sociology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0314 Sociology and cultural studies	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 3	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Student knows the current state of knowledge on the topic of the influence of social environment (family, local community, social networks) on the state of health
C2	Student knows the current state of knowledge on the topic of the influence of structural factors tied to social inequality on the state of health
C3	Student knows the current state of knowledge on the topic of socio-cultural differences in behavior tied to gender-related differences in health status
C4	Student understands what it means/the implications of the statement that health, illness, disability are social constructs
C5	Student understands the symbolic meaning of health, illness, disability as regards social attitudes relating to the ill persons, the disabled.
C6	Student knows the current state of knowledge on the subject of the social consequences of illness and medical intervention, and the socio-cultural barriers that make it difficult for the ill.
C7	Student understands what signifies the entry into the sick role for the ill person
C8	Student understands the meaning of verbal and nonverbal communications in the process of communicating with the patient
C9	Student understands the symbolic meaning of informal directives given to the patient
C10	Student understands that the professional role of the physician is a sociocultural construct
C11	Student understands the role of trust as a key element to interaction with patients
C12	Student understands the functioning of medical institutions as social institutions and understands the functioning of total institution
C13	Knows the concept of health-related quality of life (HRQoL)

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, project, test, gap filling test, multiple choice test
W2	social factors influencing behaviour in health and disease, particularly in chronic disease	D.W2	classroom observation, project, test, gap filling test, multiple choice test
W3	forms of violence, models explaining domestic and institutional violence, the social determinants of the various forms of violence and the role of the doctor in recognizing it	D.W3	classroom observation, project, test, gap filling test, multiple choice test
W4	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	classroom observation, project, test, gap filling test, multiple choice test

W5	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	classroom observation, project, test, gap filling test, multiple choice test
W6	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation, project, test, gap filling test, multiple choice test
W7	psychosocial consequences of hospitalization and chronic disease	D.W7	classroom observation, project, test, gap filling test, multiple choice test
W8	functioning of health care system entities and social role of a physician	D.W8	classroom observation, project, test, gap filling test, multiple choice test
W9	the role of the patient's family in the treatment process	D.W10	classroom observation, project, test, gap filling test, multiple choice test
W10	cultural, ethnic and national determinants of human behavior	D.W19	classroom observation, project, test, gap filling test, multiple choice test
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, multiple choice test
U2	choose treatment that minimizes the social consequences for the patient	D.U3	classroom observation, multiple choice test
U3	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	classroom observation, multiple choice test
U4	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	classroom observation, multiple choice test
U5	involve the patient in the therapeutic process	D.U7	classroom observation, multiple choice test
U6	provide advice on therapeutic recommendation compliance and following healthy lifestyle	D.U9	classroom observation, multiple choice test
U7	provide the patient and his or her family with information about unfavorable prognosis	D.U8	classroom observation, multiple choice test
U8	take action to improve the quality of life of patients and prevent it from deteriorating in the future	D.U19	classroom observation, multiple choice test
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, project, test, gap filling test, multiple choice test
K2	to be guided by the well-being of a patient	O.K2	classroom observation, project, test, gap filling test, multiple choice test

Calculation of ECTS points

Activity form	**Activity hours***

seminar	30
information collection	5
preparation of a project	10
preparation for test	15

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The role of Medical Sociology in medicine. Sociological concepts of health and illness. Psychosocial dimensions of subjective health. Illness and sickness role. Symbolic meaning of illness. Psychosocial indicators of health (well-being).	W2, U1	seminar
2.	Sociology of the body. Cultural and social determinants of health and health-related behaviors. Social network, social ties, social capital. Relations between social network and health.	W1, W10, W2, U1, U4, K1	seminar
3.	Social inequalities in health; (gender, age, socio-economic status, ethnic minorities). Role of social network (ties) in health status (scales measuring social support and ties).	W1, U4, K1	seminar
4.	Family and health. The role of the family in creation of health lifestyle. Functions of the family (social support). Early experience during family life and health outcomes in adulthood.	W1, W4, U1, U5, U6, U7	seminar
5.	Domestic violence. The impact of domestic abuse on health. Domestic violence and children. Domestic violence and the elderly. Female victims of violence.	W3	seminar
6.	Psychosocial consequences of chronic disease (changes in family, work activity, social participation). Disability as a social construct. Stigma. Social determinants of adaptation to new health conditions (psychological and social barriers).	W4, U2, U8	seminar
7.	Health related quality of life (concept, psychosocial indicators). Functional status and health-related quality of life in patients with chronic conditions (cardiovascular patients, oncological patients, older people). Scales measuring different dimensions of quality of life.	W4, U8	seminar

8.	Communication between physician and patient (types of questions, language). Patient satisfaction with the medical interview and medical care. Patient in the hospital. Internal environment of the hospital. Formal roles and interpersonal relations. Hospital as a social system. Hospitalization as a stressful life event. Decision-making process in seeking professional help. Professional role of the physician. Feminization of medical profession. Job stress in medical profession.	W5, W6, W7, W9, U1, U2, U3, K1	seminar
9.	Patient-physician interactions. Parson’s model of sick role and physician’s role. Types of patient-physician relationships. Paternalistic approach vs mutual cooperation. Process of communication (the role of verbal and nonverbal communication). Patient satisfaction.	W5, W6, U3, K1, K2	seminar
10.	Medical care system – new challenges (organ transplantation; people’s attitudes toward receiving and donating organs). The theory of institution. Hospital as a total institution.	W8	seminar

Course advanced

Teaching methods:

case study, textual analysis, discussion, educational film, case study method, group work, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, project, test, gap filling test, multiple choice test	1. Attendance on each class - absence is availabe only because of illness and should be confirmed by an appropriate medical leave. Each absence requires an oral/written credit the person leading classes. 2. Power Point presentation - prepared and presented by each student based on the article delivered. Presentation should last approx. 25 minutes. 3. Active participation during seminars. 4. Written final exam: the exam will have form of test consisting of multiple-choice questions, filling gaps, true/false questions as well as open questions with short answer. The exam will check the sociological knowledge acquired during course (comprising both terms and theories presented during classes as well as concepts in articles for students' presentations). Students will receive list of terms and issues which will be required on final exam. Student's evaluation: Student may achieve maximum 60 points from the whole course: 1. PP presentation - max. 15 p. (25%) 2. Active participation during seminars - max. 15 p. (25%) 3. Final exam - max. 30 p. (50%). In order to pass the course, student has to achieve 36 p., i.e. 60% of the maximum points. Assessment of PP presentation (max. 15 p.): 5 p. – adequate summary of terms in the given article; 3 p. – additional sources, e.g. adequate data from other research illustrating article's terms; 4 p. – presentation skills (e.g. presenting by own words, not reading slides), visual traits of presentation, overall preparation to presentation 3 p. – critical, subjective thoughts concerning presented topic in conclusion part, critical thinking questions to the rest of the group. Grading: 36 - 40 (60% – 67%) - 3,0; 40,5 - 44,5 (68% - 74%) - 3,5; 45 - 49 (75% - 82%) - 4,0; 49,5 - 53,5 (83% - 89%) - 4,5; 54 - 60 (90% - 100%) - 5,0

Additional info

Entry requirements

No prerequisities

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Introduction to Clinical Scinces

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, D. Behavioral and social sciences with elements of professionalism

Period	**Examination**	**Number of ECTS points**
Semester 3	graded credit **Activities and hours** e-learning: 3, classes: 63	3.0

Goals

C1	Students using their knowledge in basic science can solve easy clinical problems, can explain the relation between a disease and physiological issues undergoing in human body. Students can search and critically analyse medical literature, can communicate with team members, share his/hers knowledge and be able to give good feedback to the others.

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	group assessment

W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	group assessment
W3	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.W25	group assessment
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	group assessment
U2	inspire the learning process of others	O.U6	group assessment
U3	communicate and share knowledge with colleagues in a team	O.U8	group assessment
U4	critically evaluate the results of scientific research and adequately justify the position	O.U9	group assessment
U5	assess the reliability of the clinical trial	B.U18	group assessment
U6	critically analyse medical literature, including in English, and draw conclusions	D.U17	group assessment
U7	communicate with colleagues with constructive feedback and support	D.U12	group assessment
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	group assessment
K2	use objective sources of information	O.K7	group assessment
K3	formulate conclusions from own measurements or observations	O.K8	group assessment
K4	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	group assessment
K5	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	group assessment

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	3
classes	63
preparation for classes	15

Student workload	**Hours** 81
Workload involving teacher	**Hours** 66

Practical workload	Hours 63

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Problem Based Learning	W1, W2, W3, U1, U2, U3, U4, U5, U6, U7, K1, K2, K3, K4, K5	classes, e-learning

Course advanced

Teaching methods:

e-learning, lecture, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
e-learning	group assessment	Continuous structural rating which is done by tutors and group members after each case wich a feedback
classes	group assessment	Continuous structural rating which is done by tutors and group members after each case wich a feedback

Entry requirements

Knowledge of human body and it's function in physiologycal conditions

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Philosophy and ethics of human sexuality

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0223 Philosophy and ethics	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

C1	To provide students with conceptual, theoretical and methodological tools necessary to understand and analyze problems of human sexuality.
C2	To help students develop analytical and argumentative skills necessary for identifying and examining normative assumpitons that underlie different concepts of human sexuality.
C3	To help students develop analytical and argumentative skills necessary for resolving ethical dilemmas concerning human sexual practices.
C4	To make students aware of philosophical and religious assumptions underlying concepts of human sexuality
C5	To make students aware of historical and cultural assumption underlying the concepts of appropriate (normal) and inappropriate (pathological) sexual behaviors.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
W2	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
W3	the principles of health promotion, its tasks and main lines of action, with particular reference to the role of elements of a healthy lifestyle	D.W14	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
W4	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
W5	cultural, ethnic and national determinants of human behavior	D.W19	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
Skills – Student can:			

U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
U2	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
U3	comply with ethical standards in professional activities	D.U13	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
U4	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
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	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
K2	to be guided by the well-being of a patient	O.K2	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%

K3	promote health-promoting behaviors	O.K6	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%
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	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	45
preparation of a report	5
preparation of a project	10

Student workload	**Hours** 90
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Male / female - the binary distinction and its historical roots and conceptualizations	W4, W5, U1, U3, U4, K1, K4	seminar
2.	An appeal to nature nad natural law theories	W4, W5, U1, U3, U4, K1, K4	seminar
3.	Asceticism and the ideal of sexual abstinence	W4, W5, U1, U3, U4, K1, K2, K4	seminar
4.	Consent as a founding principle of modern sexual ethics	W1, W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar
5.	"Solitary sex" - the medicalization of morality	W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar

6.	Moral judgments on prostitution	W1, W2, W3, W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar
7.	Ethics and epidemiology - preventing sexually transmitted infections	W1, W2, W3, W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar
8.	The concept of harm reduction	W1, W2, W3, W4, W5, U1, U2, U3, U4, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

textual analysis, discussion, e-learning, educational film, project method, presentation, group work, assignments solving, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	The final grade is based on - activity in the classroom – 50% - written critical analysis of a text dealing with the subject matter of the seminar – 30% - group written case/problem analysis – 20%	attendance

Entry requirements

The students must demonstrate an ability to comprehend reading materials in English at B2+ level

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Philosophy of Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0222 History and archaeology	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

C1	The aim of the course is to introduce students into debates about role and place of values in medicine and to encourage them to develop their own thoughts with regard to human nature in face of still evolving the art. of healing.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, essay, project
W2	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	classroom observation, essay, project
W3	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	classroom observation, essay, project
W4	functioning of health care system entities and social role of a physician	D.W8	classroom observation, essay, project
W5	basic psychological mechanisms of human functioning in health and disease	D.W9	classroom observation, essay, project
W6	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	D.W11	classroom observation, essay, project
W7	patient's rights	D.W17	classroom observation, essay, project
W8	the process of shaping new specialties in the field of scientific discipline - medical sciences and achievements of leading representatives of Polish and world medicine	D.W22	classroom observation, essay, project
Skills – Student can:			
U1	follow the patient's rights	D.U15	classroom observation, essay, project
U2	comply with ethical standards in professional activities	D.U13	classroom observation, essay, project
U3	critically analyse medical literature, including in English, and draw conclusions	D.U17	classroom observation, essay, project
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, essay, project
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation, essay, project
K3	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, essay, project
K4	use objective sources of information	O.K7	classroom observation, essay, project

Calculation of ECTS points

Activity form	**Activity hours***

seminar	30
preparation for classes	30
preparation of a project	30

Student workload	**Hours** 90
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	1. The paradigm of medicine: a) elements of the theory of science. b) new directions of medical thinking. 2. Empiricism vs. realism - two main trends in medical thinking. 3. Insufficiency of mechanistic model of disease - hermeneutics or on the broader perspective on human nature. 4. Philosophical conceptions of man and medicine: a) interactions of medical axiology and philosophical anthropology. b) consequences of dinamic development of natural sciences and their impact on evolving of new approaches to human nature. 5. Mind-body relationship. 6. The problem of truth in ethics. 7. Main theories of moral good: a) Deontological ethics of duty b) Consequentialism (utilitarianism). 8. Ethical aspects of medical decision: autonomy vs. paternalism. 9. Bioethics as a contemporary account to moral reflection about medical theory and practice.	W1, W2, W3, W4, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

case study, textual analysis, discussion, educational film, project method, seminar, lecture

Activities	Examination methods	Credit conditions
seminar	classroom observation, essay, project	Presence is obligatory. A student can be absent two times, without any excuse. In case of further absence a student is obliged to additional work assigned by a teacher. Students activity impacts his final mark (50%) A student has to prepare and perform a presentation (20%) and an essay (30%) (a case study).

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

The main problems of human philosophy

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0223 Philosophy and ethics	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

C1	Providing students with knowledge on philosophy of the human being
C2	Developing in students relevant social skills

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, essay, project

W2	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	classroom observation, essay, project
W3	basic psychological mechanisms of human functioning in health and disease	D.W9	classroom observation, essay, project
W4	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	classroom observation, essay, project
W5	patient's rights	D.W17	classroom observation, essay, project
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, essay, project
U2	comply with ethical standards in professional activities	D.U13	classroom observation, essay, project
U3	follow the patient's rights	D.U15	classroom observation, essay, project
U4	critically analyse medical literature, including in English, and draw conclusions	D.U17	classroom observation, essay, project
U5	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, essay, project
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, essay, project
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation, essay, project
K3	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, essay, project
K4	use objective sources of information	O.K7	classroom observation, essay, project

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	20
preparation for examination	20
preparation of a paper	20

Student workload	Hours 90
Workload involving teacher	Hours 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The concept of the human being and its historical development: Socrates, Plato, Antisthenes, Epicurus, Marcus Aurelius, St. Augustine, B. Pascal, S. Kierkegaard, F. Nietzsche, M. Heidegger, A. Camus, J-P. Sartre, E. Levinas	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, K1, K2, K3, K4	seminar
2.	The most important concepts of philosophical anthropology: rationality, virtue, corporeality, suffering, mortality, freedom, responsibility, happiness, solitude, socialization, love	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

textual analysis, seminar, lecture

Activities	Examination methods	Credit conditions
seminar	classroom observation, essay, project	Presence is obligatory. A student can be absent two times, without any excuse. In case of further absence a student is obliged to additional work assigned by a teacher. Students activity impacts his final mark (50%) A student has to prepare and perform a presentation (20%) and an essay (30%) (a case study).

Entry requirements

Participation to seminars is obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medicine of the Third Reich

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0222 History and archaeology	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** e-learning: 30	3.0

Goals

C1	In the Third Reich, medicine has become one of the main instruments of introducing racist policy. Without active participation of many doctors and nurses, the program of compulsory sterilisation, forced euthanasia, and medical experiments in concentration camps would not be fully implemented. Moreover, their involvement in eugenics provided pseudo-scientific justification for anti-Semitism. Therefore, the aim of the course is to describe and analyse eugenic ideas in the Third Reich in comparative context, as well as to raise student’s awareness of crucial role of ethics in the profession of doctors.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	written examination, classroom observation, essay
W2	cultural, ethnic and national determinants of human behavior	D.W19	written examination, classroom observation, essay
W3	standards relating to patients' rights	D.W24	written examination, classroom observation, essay
Skills – Student can:			
U1	follow the patient's rights	D.U15	written examination, classroom observation, essay
U2	demonstrate responsibility for one’s own professional development, contribute to the further development of sciences, transfer own knowledge to others	D.U22	written examination, classroom observation, essay
Social competences – Student is ready to:			
K1	formulate opinions on the various aspects of the professional activity	O.K10	written examination, classroom observation, essay
K2	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	written examination, classroom observation, essay
K3	to be guided by the well-being of a patient	O.K2	written examination, classroom observation, essay

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	30
case analysis	60
Student workload	**Hours** 90
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Topic 1 I. Situation and role of Jewish society in pre-war Krakow - 2h Prof. dr hab. n. med. Aleksander Skotnicki II. Holocaust in the light of philosophy - 4h Prof. dr hab. Jan Woleński • Problem of explanation: intentionalism, contextualism • Image of a Jew in Nazi propaganda - Jew as public enemy No. 1 • Philosophical foundations of the Nazi race concept • Dehumanization of Jews • Construction of the world of death • The Holocaust and religion • Sources of knowledge about the Holocaust • The problem of narrative about the Holocaust: realism, symbolism • Moral attitudes towards the Holocaust • The issue of responsibility for the Holocaust . III. Institutionalization of racist doctrine in the Third Reich - 6h mgr Katarzyna du Vall 1. Birth of the racist stream of eugenics • International context: ideas of eugenics in the United States, Scandinavia and Poland • Race hygiene movement in Germany • The problem of race in Nazi ideologists: the views of Adolf Hitler, Alfred Rosenberg , Walthera Darré 2. Eugenics of population policy in the Third Reich • The so-called inherited; problem of Jewish population • eugenic legislation • Organization of health care; doctors in the SS ranks and oath of loyalty to Hitler • The role of propaganda in the implementation of the eugenics program 3. Positive and negative Eugenics • Family policy, the role of women, Lebensborn • Sterilization for eugenic reasons of German citizens 4. Euthanasia • Action T4 (program of physical "elimination of life not worth living "Implemented in the years 1939–1941); euthanasia of children 5. Eugenics and so-called Jewish issue • Anti-Jewish legislation in Germany. IV. Implementation of the anti-Jewish policy of the Third Reich after the outbreak of World War II - 4h Agnieszka Zajączkowska-Drożdż, MA • Anti-Jewish legislation in the occupied territories and incorporated into the Third Reich • Concepts of solving the so-called Jewish issues: resettlement to the General Government, idea of creating a Jewish 'reserve' in Madagascar, idea of resettlement to the USSR • Conference in Wannsee • The role of state administration in the Holocaust of Jews • Ghettoization • The role of concentration camps . V. Medical and pseudomedical experiments and post-war fate of doctors - 6h mgr Agnieszka Zajączkowska-Drożdż 1. Medical and pseudomedical experiments • Guidelines of the Nazi authorities regarding the method and scope of conducting experiments • Experiments carried out in the Buchenwald, Auschwitz-Birkenau, Ravensbruck, Dachau, Mauthausen-Gusen, Natzweiler-Struthof, Neuengamme, Sachsen and Sachsen camps Types of experiments carried out • Range of experiments, number of victims, number of doctors involved • Profiles of individual doctors and nurses 2. Post-war fate of doctors • First Nuremberg trial - US trial A vs. Karl Brandt and others: main defendants, charges and proceedings, judgments • Profile of Karl Brandt - doctor Adolf Hitler. • Presentation of fragments of source materials from the process. VI. Contemporary bioethical issues in the historical context - 8h Katarzyna du Vall	W1, W2, W3, U1, U2, K1, K2, K3	e-learning

Course advanced

Teaching methods:

case study, discussion, e-learning, problem solving method, case study method, presentation, group work, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
e-learning	written examination, classroom observation, essay	attendance + exam / presentation / essay

Entry requirements

Interest in the history of medicine and medical ethics in the interwar period and during WW2.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Neuroethics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

C1	The main objective of the course is to provide students with the fundamental concepts and theories of neuroethics
C2	A student is able to define and discuss the body-mind problem, the distinction between so-called easy- and hard problem of consciousness and other problems of philosophy of mind.
C3	A student is able to define and discuss different types of human behavior: intentional, spontaneous, free, compulsive, and coerced, and is able to applied them into discussions on mental disorder, addiction and free will.
C4	A student is able to define and discuss the concepts of free well, moral responsibility (in moral and legal terms), mental state, state of affairs, and belief.
C5	A student is able to define the field bioethics and neuroethics, as well as their basic problems, theories and arguments.
C6	A student is able to describe and discuss main theories of body-mind problem (e.g. emergency, dualism, monism, anomalous monism) and the philosophical problem of artificial intelligence (e.g. Chinese room thought experiment).
C7	A student is able to define and discuss the concept of personhood, personal identity and their ethical implications.
C8	A students is able to describe and discuss the ethical problems of coercion in psychiatry.
C9	A student is able to define and discuss the concept of criminal accountability and legal capacity in the context of mental disorder.
C10	A student is able describe and discuss the ethical problems of addiction and therapy of patients diagnosed with addition.
C11	A student is able to discuss the concept of mental disorder/mental illness, as well as theories of illness, disability, disorder and health.
C12	A student is able to define and discuss the concept of enhancement (e.g. cognitive, moral), and a moral implications of interventions designed to improve normal human functioning.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of conducting scientific research	O.W5	classroom observation, assignment report
W2	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	classroom observation, assignment report
W3	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, assignment report
W4	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	classroom observation, assignment report

W5	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation, assignment report
W6	functioning of health care system entities and social role of a physician	D.W8	classroom observation, assignment report
W7	patient's rights	D.W17	classroom observation, assignment report
W8	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	classroom observation, assignment report
W9	standards relating to patients' rights	D.W24	classroom observation, assignment report
Skills – Student can:			
U1	inspire the learning process of others	O.U6	classroom observation, assignment report
U2	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, assignment report
U3	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, assignment report
U4	recognise and apply measures provided for by law when it is necessary to take medical action without consent or with the use of coercion	D.U20	classroom observation, assignment report
U5	critically analyse medical literature, including in English, and draw conclusions	D.U17	classroom observation, assignment report
U6	follow the patient's rights	D.U15	classroom observation, assignment report
U7	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, assignment report
U8	comply with ethical standards in professional activities	D.U13	classroom observation, assignment report
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, assignment report
K2	to be guided by the well-being of a patient	O.K2	classroom observation, assignment report
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, assignment report
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, assignment report
K5	use objective sources of information	O.K7	classroom observation, assignment report

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
preparation of multimedia presentation	30
preparation for classes	15

Student workload	Hours 75
Workload involving teacher	Hours 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The ethical implications of body-mind problem: the concept of personal responsibility and causality.	W1, W2, W8, U1, U2, U3, U5, K5	seminar
2.	The correlations between brain’s activity and certain types of behavior and beliefs: the problem of public security and conformity. Should we prevent socially undesirable behaviors by pre-symptomatic interventions and isolation?	W1, W3, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U7, U8, K3, K5	seminar
3.	The concept of mental illness/disorder and the concept of health. The anti-psychiatry movement and its intellectual heritage today. The ethical consequences of deinstitutionalization.	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar
4.	The concepts of neurodiversity and neurodiversity movements. The main ethical challenges of neurodiverse society.	W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar
5.	The idea of neuroenhancement. Cosmetic pharmacology: tyranny of happiness vs. self-creation.	W2, W3, W4, W5, W6, W8, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar
6.	The idea of neurenhancement: memory editing and personal identity.	W2, W3, W4, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K3, K4, K5	seminar
7.	Cognitive enhancement in school and in professional life. Should we ban it? Should we regulate it?	W2, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K5	seminar
8.	The idea of neuro-moral-enhancement: should we search for drugs that make us morally better humans?	W6, W7, U1, U2, U3, U7, U8, K1, K2, K5	seminar
9.	Informed consent in psychiatry and neurology. The ethics of coercion.	W2, W3, W4, W5, W6, W7, W8, W9, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar

10.	Confidentiality in psychiatry and psychotherapy	W2, W4, W5, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar
11.	Research ethics for psychiatry and neurology	W1, W2, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, classes / practicals, discussion, educational film, project method, group work, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, assignment report	

Entry requirements

Block

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Crossing the limits of humanity - Ethics towards the scientific challenges of progress in medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods Semester 3, Semester 4	**Examination** graded credit **Activities and hours** seminar: 30	**Number of ECTS points** 3.0

Goals

G1	Acquainting students with philosophical and moral problems associated with new technologies in medicine.
G2	Making students aware that every technology imposes certain depicted worldview and embodies praticular values.
G3	Elucidating students moral dilemmas stemming from development of science and technology.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, project
W2	social factors influencing behaviour in health and disease, particularly in chronic disease	D.W2	classroom observation, project
W3	functioning of health care system entities and social role of a physician	D.W8	classroom observation, project
W4	basic psychological mechanisms of human functioning in health and disease	D.W9	classroom observation, project
W5	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	classroom observation, project
W6	patient's rights	D.W17	classroom observation, project
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	classroom observation, project
U2	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, project
U3	comply with ethical standards in professional activities	D.U13	classroom observation, project
U4	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, project
Social competences – Student is ready to:			
K1	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, project

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	30
preparation of a project	30

Student workload	**Hours** 90
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	What is technology? The concept of technological progres, interrelations between science and technology, and between technology and nature and culture.	W5, U4	seminar
2.	Philosophy, social anthropology: social sciences and humanities vs. medicine and technology.	W1, W5, U4	seminar
3.	How medicine creates its subject? Part I: Body.	W1, W2, U1	seminar
4.	How medicine creates its subject? Part II: Mind and soul.	W1, W2, W4, U2, K1	seminar
5.	Information technologies in medicine and their impact on scientific research, medical practice and patients' life.	W3, W6, U2	seminar
6.	Artificial intelligence in health care.	W3, W6, K1	seminar
7.	New technologies in care of chronically ill patients: analysis of patients' experience.	W1, W2, W4, U2	seminar
8.	Genetic engineering: fundamental ethical and political problems.	W2, U1, U4	seminar
9.	Reproductive cloning: philosophical and ethical aspects.	W5, U4, K1	seminar
10.	Artificial womb - do we really want it? Philosophical and ethical problems connected with technologization of procreation.	W1, W2, W4, W5, U2, U4, K1	seminar
11.	Enhancement: extending capacities of human organism.	W2, U1, U2, K1	seminar
12.	Enhancement: the case of cosmetic psychiatry and neuroscience.	W1, W4, U2, K1	seminar
13.	Borders of human body: technological extension of the body.	W2, W4, U1, U2, K1	seminar
14.	Enhancement and morality: may technology make us more ethical?	W5, U3, U4, K1	seminar
15.	Enhancement and morality: can we take control over technology or would we become its victims?	W5, U3, U4, K1	seminar

Course advanced

Teaching methods:

case study, textual analysis, discussion, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, project	1. Assessment of active participation in seminar discussions 2. Assessment of the project prepared by students.

Entry requirements

Participation to seminars is obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Introduction to the philosophy of science

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0223 Philosophy and ethics	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

G1	Providing students with theoretical knowledge and methodological tools allowing them to conceive the character of scientific knowledge.
G2	Revealing historical changeability in understanding of standards of scientificity in various periods.
G3	Acquainting students with description of mechanisms of scientific knowledge development.
G4	Showing students myths and stereotypes in social comprehension of science.
G5	Developing in students ratinally critical approach towards science and social expectations from it.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	methods of conducting scientific research	O.W5	classroom observation, essay
Skills – Student can:			
U1	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, essay
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	classroom observation, essay

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	20
preparation of a paper	40
Student workload	**Hours** 90
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Philosophy of science as expression of self-awareness of scientists and philosophers with regard to scientific knowledge and its development.	W1, U1, K1	seminar
2.	Theoretical structure of empirical and deductive sciences - similarities and differences.	W1, U1, K1	seminar
3.	Methods of creation of scientific theories in empirical sciences.	W1, U1, K1	seminar
4.	Basic methods of reasoning in empirical sciences: induction, deduction, reduction.	W1, U1, K1	seminar
5.	Interdependence of empirical and theoretical knowledge in the development of science.	W1, U1, K1	seminar
6.	Methods of conducting empirical research and principles of verification of its results.	W1, U1, K1	seminar
7.	The role of fact and discovery in the growth of knowledge.	W1, U1, K1	seminar
8.	Cognitive status of scientific theories and their impact on the development of science.	W1, U1, K1	seminar

9.	Main theories of growth of science: positivistic theories, fasificationism, theory of scientific revolutions, methodological realism and operationalism.	W1, U1, K1	seminar
10.	Specificity of research methods in biomedical sciences.	W1, U1, K1	seminar
11.	Methodology of basic and clinical research.	W1, U1, K1	seminar
12.	Principles of verification and interpretation of research results - methodological traps.	W1, U1, K1	seminar
13.	Concepts of norm and pathology in biomedical sciences.	W1, U1, K1	seminar
14.	The concept of disease and controversies surrounding it.	W1, U1, K1	seminar
15.	Logico-methodological and ethical implications of the theory of empirical research in biomedical sciences.	W1, U1, K1	seminar

Course advanced

Teaching methods:

textual analysis, discussion

Activities	Examination methods	Credit conditions
seminar	classroom observation, essay	The final score consists on: - active participation in class discussions - 50% - assessment of critical review of a suggested book relevant to the issues of the course - 50%

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Neurodegeneration, diseases in art and famous forgers

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0223 Philosophy and ethics	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** e-learning: 15, seminar: 15	3.0

Goals

C1	The aim of the course is to acquaint students with the molecular basis of neurodegenerative diseases. The content will also be supported by examples of new therapeutic concepts. In addition, examples of diseases, diagnosed by experts, presented in art objects will also be given. As part of humanizing content, the content will be supplemented with a description of the best-known cases of art forgeries, and a description of detection techniques. After completing the course, the student will acquire knowledge about the mechanisms of neurodegenerative diseases, will also learn a different view of art and gain general knowledge about artists.

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	test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	test
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	test
U2	inspire the learning process of others	O.U6	test
U3	communicate and share knowledge with colleagues in a team	O.U8	test
U4	critically evaluate the results of scientific research and adequately justify the position	O.U9	test
U5	communicate with colleagues with constructive feedback and support	D.U12	test
U6	critically analyse medical literature, including in English, and draw conclusions	D.U17	test
U7	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	test
U8	demonstrate responsibility for one’s own professional development, contribute to the further development of sciences, transfer own knowledge to others	D.U22	test
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	test
K2	use objective sources of information	O.K7	test
K3	formulate conclusions from own measurements or observations	O.K8	test
K4	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	test

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	15
information collection	20
preparation for test	20
analysis of the research material	20
seminar	15
Student workload	**Hours** 90

Workload involving teacher	Hours 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Molecular basis of neurodegenerative diseases Parkinson's Disease, the role of cigarettes, astrocytes and peptides, synuclein; Alzheimer's Disease (amyloid deposits, Tau protein, secretases, metals, therapeutic strategies). We still know that we know nothing; Huntington's Chorea and the role of huntingtin; Amyotrophic Lateral Sclerosis (ALS); Multiple Sclerosis as an example of autoimmune disease; Friedreich's Ataxia and frataxin; Chronic Traumatic Encephalopathy (CTE), boxing and American football; Spinal Muscle Atrophy (SMA), SMN gene and protein, antisense techniques; Models of neurodegenerative diseases: animal, cellular, 3D-organoids and their features; Biochemical diagnosis of neurodegenerative diseases; CRISPR / CAS9 technique as a potential therapy for genetic diseases.	W1, W2	seminar, e-learning
2.	Presentation of diseases in the artwork - from the point of view of neuroscience and biochemistry; Removing the stone of stupidity and Dr. Tulp's Anatomy Lesson; Urine taste as a basic diagnostic material; Expelling the devil as a method of treating epilepsy; Michelangelo and hidden neuroanatomy; Vincent Van Gogh and the influence of solvents on his behavior; Henri de Toulouse Lautrec is as tall as his name; Did pituitary cancer help David to win over Goliath?; Down Syndrome in the works of the Renaissance masters; What did Mona Lisa suffer from? From syphilis to the witches of Salem; Claude Monet and vision problems; Alzheimer's Disease helps in the development of talent (at least in some !!).	U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	seminar, e-learning

3.	Is this real art? - forgery of works of art and great counterfeiters Collision with reality; Are 50% of the works really fake?; In pursuit of fame - forgers and criminals (Han van Meegeren, John Myatt, Mark Landis, Mark William Hofmann and ... Michelangelo; Known forgeries (Shroud of Turin, relics of Joanna D'Arc, Hitler's diaries, frescoes in Lübeck, and Thomas Jefferson's basement; Great deceived and falling galleries; Analytical techniques at the crime scene, or "let's do Rembrandt ourselves"	W1, W2, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	seminar, e-learning

Course advanced

Teaching methods:

case study, brainstorm, discussion, presentation, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
e-learning	test	• single-choice written test attendance min. 70% of the total course time
seminar	test	• single-choice written test attendance min. 70% of the total course time

Entry requirements

basic knowledge on biochemistry and physiology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

History of Philosophy

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 3, Semester 4	graded credit **Activities and hours** seminar: 30	3.0

Goals

C1	Apprehension of philosophical problems

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of conducting scientific research	O.W5	oral examination
W2	cultural, ethnic and national determinants of human behavior	D.W19	oral examination
Skills – Student can:			

U1	communicate and share knowledge with colleagues in a team	O.U8	oral examination
U2	comply with ethical standards in professional activities	D.U13	oral examination
U3	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	oral examination
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	oral examination
K2	formulate opinions on the various aspects of the professional activity	O.K10	oral examination

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation of a report	60
Student workload	**Hours** 90
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	1. The idea of philosophy & its main divisions. Pre-socratic thought. Heraclitus and Parmenides. 2. Knowledge vs. opinion. Controversies between Socrates and sophists. The trial of Socrates. 3. Plato and the foundations of Western metaphysics. Ideas and shadows – the metaphor of the cave. 4. Aristotle's ethics. Virtue as a mean between excess and deficiency 5. Faith and reason – revelation vs. philosophy. Theism, atheism and agnosticism. 6.Augustine on orthodoxy and heresy. Controversies over manicheanism and pelagianism 7. Descartes and Bacon – the foundations of modern rationalism and empiricism. The bridge between subject and object. 8. Swift's satire on modern philosophy. Science and tyranny. Utopia and dystopia 9. The state of nature and social contract in Hobbes and Rousseau. Authority and revolution. 10. The political philosophy of classical liberalism – Locke and Montesquieu. The Declaration of Independence. 11. Hegel's philosophy of history. Hegel's logic – dialectics. The philosophy of labour – the master and the slave. 12. Capitalism – for (Adam Smith) and against (Karl Marx). The communist idea in the XXth century. 13. Comte and positivism. The problem of the fact – value distinction. 14. Nietzsche and the death of God – the problem of nihilism. Genealogy of morals – the concept of ressentiment. 15. Kierkegaard, Heidegger and existentialism in the XXth century.	W1, W2, U1, U2, U3, K1, K2	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, discussion, case study method, presentation, workshop, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	oral examination	active presence

JAGIELLONIAN UNIVERSITY
MEDICAL COLLEGE

Medical Biophysics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** B. Scientific basics of medicine
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 4	examination **Activities and hours** e-learning: 10, seminar: 10, laboratory: 28	3.0

Goals

C1	To familiarize students with the laws and concepts in biophysics used to describe processes taking place in the human body, in particular with: (1) the basics of thermodynamics (solubility, diffusion, osmotic pressure, Donnan equilibrium), (2) biophysical description of cell, tissue and organ functioning and physiological processes in the human body, (3) laws of physics describing fluid flow and functioning of the vascular and respiratory systems, (4) basic laws describing electrical and magnetic phenomena in the human body (resting and action potential of the cell membrane, electrical properties of tissues, effects of electric current flow in the body, safety limits for current/voltage values, pacemaker, defibrillator.
C2	To familiarize students with the effects of physical factors such as temperature, gravity, pressure, acceleration, electromagnetic field and ionizing radiation on the human body, in particular with: (1) the sources of electromagnetic radiation and radiation properties depending on the source type, (2) influence of electromagnetic radiation from various ranges on living organism and its application in diagnostics and therapy, (3) the phenomenon of radioactive decay and various types of ionizing radiation, interaction of ionizing radiation with living matter, (4) risk assessment methods of influence of various physical factors on the human body, (5) dose harmfulness of non-ionizing/ionizing radiation and other physical factors acting on the human body, radiation protection.
C3	To familiarize students with the basics of physical methods used in diagnostics and therapy, in particular with: (1) analysis of biophysical phenomena and processes occurring in therapy and diagnostics, (2) physical background of non-invasive imaging methods, (3) physical description of selected therapeutic techniques e.g. ultrasounds and various types of electromagnetic radiation in a wide range of energies.
C4	To familiarize students with the use of simple measuring instruments, accuracy of measurements and planning experiments to determine the physical parameters of the object, in particular with: (1) operation of selected diagnostic and therapeutic measuring instruments (e.g. multimeter, ECG apparatus, laser, ultrasound apparatus, spirometer, magnetotherapy device, dialyzer, apparatus for electrodiagnostics, X-ray tube, radiometer), (2) using dedicated software supporting or controlling the operation of these devices and assess the accuracy of the performed measurements, (3) using databases, including online ones, and searching for the needed information with the use of available tools, (4) performing a biophysical experiment and analyzing measurement results with the use of statistical programs, spreadsheets and graphic programs.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	practical test, assignment report
W2	methods of conducting scientific research	O.W5	assignment report
W3	water and electrolyte management in biological systems	B.W1	practical test, assignment report, test
W4	terms: solubility, osmotic pressure, isotonia, colloidal solutions and Gibbs-Donnan equilibrium	B.W3	practical test, assignment report, test
W5	physical laws describing fluid flow and factors affecting vascular resistance to blood flow	B.W5	practical test, assignment report, test
W6	natural and artificial sources of ionising radiation and their interaction with matter	B.W6	practical test, assignment report, test
W7	physicochemical and molecular basis of sensory organs activity	B.W7	practical test, assignment report, test
W8	the physical basis of non-invasive imaging methods	B.W8	practical test, assignment report, test
W9	physical fundamentals of selected therapeutic techniques, including ultrasound and irradiation	B.W9	practical test, assignment report, test

W10	basics of induction and transmission in the nervous system and higher nervous actions as well as physiology of striated and smooth muscles and blood functions	B.W20	practical test, assignment report, test
W11	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	practical test, assignment report, test
W12	the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.W25	practical test, assignment report, test
W13	basic methods of statistical analysis used in population and diagnostic studies	B.W27	assignment report
W14	principles of conducting scientific, observational and experimental studies and in vitro studies for the development of medicine	B.W29	assignment report
W15	basic laws describing electrical and magnetic phenomena in the body	B.W30	assignment report, test
W16	basic laws of mechanics referring to the skeletal and muscular system	B.W31	assignment report, test
W17	rules of using materials published on the Internet (copyright, quoting law, methods of obtaining free materials)	B.W37	assignment report, test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	practical test, assignment report
U2	use knowledge of the laws of physics to explain the effects of external factors such as temperature, acceleration, pressure, electromagnetic field and ionising radiation on the body and its elements	B.U1	practical test, assignment report
U3	assess the harmfulness of the dose of ionising radiation and comply with the principles of radiological protection	B.U2	practical test, assignment report
U4	predict the direction of biochemical processes depending on the energetic state of cells	B.U6	practical test, assignment report
U5	operate simple measuring instruments and evaluate the accuracy of measurements made	B.U9	assignment report
U6	use databases, including online databases, and search for the necessary information using the available tools	B.U10	practical test, assignment report, test
U7	select appropriate statistical tests, conduct basic statistical analyses, use appropriate methods of presenting results, interpret the results of meta-analyses and analyze the probability of survival	B.U11	assignment report
U8	plan and perform simple scientific research and interpret its results and draw conclusions	B.U13	assignment report
U9	indicate the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes	B.U14	practical test, assignment report, test
U10	identify sources of electrical signals in the body	B.U15	practical test, assignment report

U11	use on-line photo, audio and video libraries	B.U21	assignment report, test
U12	provide expert knowledge through simple IT techniques of knowledge representation such as a block diagram or a rule database	B.U28	assignment report
U13	use e-learning platforms	B.U30	test
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	practical test, assignment report, test
K2	use objective sources of information	O.K7	practical test, assignment report, test
K3	formulate conclusions from own measurements or observations	O.K8	practical test, assignment report
K4	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	assignment report

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	10
seminar	10
laboratory	28
preparation for classes	12
preparation for classes	10
preparation for examination	19
participation in examination	1

Student workload	**Hours** 90
Workload involving teacher	**Hours** 48
Practical workload	**Hours** 28

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Structure and states of matter - atomic nucleus, atom, molecule, gases (partial pressure, Dalton's law, air composition, vapors, liquids (surface tension, viscosity), solids (bone and tooth structure), phase transitions (ebullism), gas solubility in liquids (Henry's law, aeroembolism, caisson disease, oxygen intoxication, nitrogen narcosis). Biophysical description of biological systems, the living organism as a thermodynamic system, mechanisms of heat transport, heat loss of the body, the body's heat balance, basal metabolic rate, work of the heart, lungs and kidneys, hyperthermia, hypothermia and cryotherapy, mechanisms of membrane transport, diffusion phenomenon, Fick's law, osmosis, van't Hoff's law, osmotic pressure, role of the osmotic pressure in transport through the wall of capillary vessel.	W1, W12, W3, W4, U1, U13, U4, U9, K2	seminar, e-learning
2.	Mechanical properties of biological systems, gravity, overloads, traffic accidents, balance and deformation of solids, Hooke's law, mechanical properties of bones. Fluid mechanics, hydrostatics, the effect of hydrostatic pressure on circulatory and respiratory systems functioning, speed distribution of blood in vessel, laminar and turbulent flow, volumetric flow, vascular resistance, pulse wave, description of cardiovascular and respiratory systems functioning based on fluid mechanics, blood pressure measurements.	W1, W11, W16, W5, U1, U13, K2	seminar, e-learning
3.	Electrical and magnetic properties of the biological substances, electrical conductivity of tissues and organs, electric model of tissue, bioimpedance measurements, Hoorweg-Weiss curve, electrodiagnostics and electrotherapy, the effect of electric current flow on the human body, electric shock, pacemaker and defibrillator, magnetic fields, diamagnetic and paramagnetic materials, application of magnetic fields in medicine.	W1, W10, W15, W7, U1, U10, U13, U9, K2	seminar, e-learning
4.	Types and sources of electromagnetic radiation, radio waves and microwaves, antennas, infrared radiation, visible light, photodynamic reactions, ultraviolet, physical background and properties of laser radiation, lasers, X-ray tube and its parameters, properties of X-ray radiation used in medicine, particle accelerators used in medicine. Influence of non-ionizing radiation on biological systems, application of electromagnetic radiation in the range of UV/VIS/IR in medicine, lasers in medicine, therapeutic application of electromagnetic fields in the range of low and high frequencies, specific absorption rate. Influence of ionizing radiation on biological systems, absorption law, quantities used in radiation protection and safety standards, radioactive decay law, characteristics of radioactive sources applied in medicine, brachytherapy and teletherapy, radioactive isotopes in diagnostics, gamma camera, scintigraphy, single photon emission tomography, positron emission tomography.	W1, W11, W12, W6, W9, U1, U13, U2, U3, K2	seminar, e-learning

5.	Imaging diagnostics, X-ray apparatus, roentgenography, minimization of radiation doses and image optimization, pantomography, densitometry, computed tomography and principle of measurement, tomographic window, phenomenon of magnetic resonance, magnetic resonance tomography and principle of measurement, magnetic resonance spectroscopy, advanced ultrasound techniques (Doppler effect, higher harmonics, 3D and 4D imaging), types of contrast agents applied in various method of diagnostic imaging.	W1, W13, W17, W8, U1, U11, U13, U6, K2	seminar, e-learning
6.	Lab classes include self-implementation by students experiments with the use of devices and organ models built at the Biophysics Department. Individual exercises concern the following issues: methodology of physical experiment (error calculation), measurement and data analysis of selected physiological quantities, acquisition and computer processing of diagnostic images, mechanical properties of bones, model of the circulatory system, hemodialysis, pharmacokinetics, subtractive angiography, ultrasonography, electrocardiography and electromyography, model of the respiratory system and spirometry, keratometry (eye model), audiometry (ear model), electrotherapy and magnetotherapy	W13, W14, W2, U11, U12, U5, U6, U7, U8, K1, K3, K4	laboratory

Course advanced

Teaching methods:

laboratories (labs), e-learning, seminar

Activities	Examination methods	Credit conditions
e-learning	test	E-learning: test, 50% of correct answers.
seminar	practical test	Seminars: practical test at the end of each seminar, 5 questions, each question is rated on a scale of 0-10 points. For getting credit it is necessary to get an average grade equal to minimum 6 points.
laboratory	assignment report	Labs: report, each exercise is rated on a scale of 0-10 points. For getting credit it is necessary to get an average grade equal to minimum 6 points from all exercises.

Additional info

Medical Biophysics course completes the final test exam. The final exam is a test exam, 60 questions, 5 possible answers, one point is obtained for each correctly indicated answer. Time duration is 60 minutes. Passing the exam requires collecting 30 points. A lower score means failed exam. The final positive grade is determined by adding all the exam points (if passed) and bonus points collected on seminars and labs.

Entry requirements

Knowledge in physics, mathematics and chemistry at the basic level. Ability to adapt this knowledge to solve problems in biophysics. Ability to prepare for classes with the use of given literature and other learning materials.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Pharmacology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22, 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course

Period	**Examination**	**Number of ECTS points**
Semester 4	credit **Activities and hours** seminar: 25, e-learning: 25	4.0

Period	**Examination**	**Number of ECTS points**
Semester 5	- **Activities and hours** e-learning: 23, seminar: 22	0.0

Period	**Examination**	**Number of ECTS points**
Semester 6	examination **Activities and hours** seminar: 23, e-learning: 22	9.0

Goals

C1	several groups of drugs
C2	main mechanisms of drug action and its transformation in organsim, dependindg af age
C3	effect of pathological influense on drug metabolism
C4	basic rules of pharmacotherapy
C5	main unwanted action of drugs, deriving from their interlaction
C6	drug resistance, including multidrugresistace
C7	indication for genetical reaeach in acheiwement of individuallisation of therapy
C8	main fieds of therapeutics future, including possibilities of cell therapy, gene tharapy and induction therapy
C9	main subcject from general toxicology
C10	grups of drugs, overuse of which can lead to toxicity
C11	symptoms of the most common drug toxicity
C12	how to treat poisoning

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basic rules of pharmacotherapy	C.W38	test, multiple choice test, credit
W2	more important side effects of medicines, including those resulting from their interaction	C.W39	test, multiple choice test, credit
W3	the problem of drug resistance, including multi-drug drug resistance	C.W40	test, multiple choice test, credit
W4	indications for genetic tests performed with the aim of individualizing pharmacotherapy	C.W41	test, multiple choice test, credit
W5	basic directions of therapy development, in particular the possibilities of cellular, gene and targeted therapy in specific diseases	C.W42	test, multiple choice test, credit
W6	basic concepts of general toxicology	C.W43	test, multiple choice test, credit
W7	groups of medicines, the abuse of which can lead to poisoning	C.W44	test, multiple choice test, credit
W8	symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected groups of drugs	C.W45	test, multiple choice test, credit
W9	basic principles of diagnostic procedures in poisoning	C.W46	test, multiple choice test, credit
Skills – Student can:			
U1	use pharmaceutical guides and databases on medicinal products	C.U17	test, multiple choice test, credit

U2	assess toxicological hazards in specific age groups and in conditions of hepatic and renal failure, and prevent drug poisoning	C.U18	test, multiple choice test, credit
U3	interpret the results of toxicological tests	C.U19	test, multiple choice test, credit
U4	prepare records of all forms of prescription medicinal substances	C.U16	test, multiple choice test, credit
U5	design schemes of rational chemotherapy of infections, empirical and targeted ones	C.U15	test, multiple choice test, credit
U6	perform simple pharmacokinetic calculations	C.U13	test, multiple choice test, credit
U7	select drugs at appropriate doses in order to correct pathological phenomena in the system and in individual organs	C.U14	test, multiple choice test, credit
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	test, multiple choice test, credit
K2	promote health-promoting behaviors	O.K6	test, multiple choice test, credit

Calculation of ECTS points

Semester 4

Activity form	**Activity hours***
seminar	25
e-learning	25
preparation for classes	50
Student workload	**Hours** 100
Workload involving teacher	**Hours** 50

* hour means 45 minutes

Semester 5

Activity form	**Activity hours***
e-learning	23
seminar	22
preparation for classes	50

Student workload	**Hours** 95
Workload involving teacher	**Hours** 45

* hour means 45 minutes

Semester 6

Activity form	**Activity hours***
seminar	23
e-learning	22
preparation for classes	50
preparation for examination	100
Student workload	**Hours** 195
Workload involving teacher	**Hours** 45

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Pharmacodynamics	W1, W5, U1, U6, K1, K2	seminar, e-learning
2.	Pharmacokinetics	W1, W2, U1, K1, K2	seminar, e-learning
3.	Chemical mediators in autonomic nervous system - cholinergic transmission - cholinergic agonists and antagonists - neuromuscular blocking drugs - autonomic ganglia drugs	W1, W2, W6, W7, W8, U1, U3, U7, K1	seminar, e-learning
4.	Adrenergic transmission - adrenergic receptors - adrenoceptor agonists and antagonists	W1, W2, W7, W8, U1, U2, U3, U4, U5, U6, U7, K1	seminar, e-learning
5.	Local hormones (autacoids) in inflammation and allergy - histamine, serotonin Nitric oxide and drugs.	W1, W2, W5, U1, U7, K1	seminar, e-learning
6.	Bradykinin, angiotensin II, ACEI, ARB, Endothelin and its blockers.	W1, W2, W5, U1, U7, K1	seminar, e-learning
7.	Eicosanoids and PAF (platelet activating factor) - drugs connected with eicosanoids	W1, W2, W4, W5, W7, W8, U1, U2, U7, K1	seminar, e-learning

8.	Non-steroidal anti-inflammatory drugs - treatment of gout - treatment of rheumatoid arthritis	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, K1, K2	seminar, e-learning
9.	Chemical transmission in the central nervous system - classification of psychotropic drugs Non-therapeutic drugs (alcohol, others)	W6, W7, W8, W9, U7	seminar, e-learning
10.	Anxiolytic and hypnotic drugs. Opioids. Treatment of pain.	W7, W8, U1, U2, U7, K1	seminar, e-learning
11.	General anaesthesia agents. Local anaesthetic drugs.	W1, W2, W3, W7, W8, W9, U1, U2, U7, K1	seminar, e-learning
12.	Neuroleptic drugs and drugs used in affective disorders.	W1, W2, W3, W4, W5, W7, U1, U2, U7, K1, K2	seminar, e-learning
13.	Treating of motor disorders: epilepsy and Parkinsonism.	W1, W8	seminar, e-learning
14.	Central nervous system stimulants and psychomimetics. Cannabinoids, LSD, heroine, amphetamine, cocaine. Treatment of drug abuse.	W1, W2, W3, W5, W7, U1, U2, U7, K1	seminar, e-learning
15.	Basic principles of chemotherapy - sulphonamides Antibacterial agents Cell wall synthesis inhibitors (penicillin, cephalosporin, monobactams, carbapenems).	W1, W7, U1, U4, U7, K1	seminar, e-learning
16.	Inhibitors of bacterial protein synthesis (tetracyclines, macrolides, aminoglycosides, chloramphenicol, other antibiotics) Fluoroquinolones Antifolate drugs.	W1, W2, W3, U1, U2, U5, U7, K1, K2	seminar, e-learning
17.	Antimycobacterial agents - treatment of tuberculosis and leprosy Antifungal drugs.	W1, W2, W3, U1, U2, U5, U7, K1, K2	e-learning
18.	Antiviral drugs. Antiprotozoal drugs and anthelminthic drugs.	W1, W2, W3, U1, U2, U5, U7, K1, K2	e-learning
19.	Cancer chemotherapy. Progress in cancer immunotherapy.	W1, W2, W3, U1, U2, U5, U7, K1, K2	seminar, e-learning
20.	The endocrine system - anterior pituitary hormones - hypothalamic hormones	W1, W2, W3, U1, U2, U7, K1, K2	seminar, e-learning
21.	Thyroid and parathyroid hormones.	W1, W2, W3, U1, U2, U7, K1, K2	seminar
22.	Adrenal steroids and related drugs The reproductive system - estrogens, androgens, anabolic hormones, contraceptives.	W1, W2, W3, U1, U2, U7, K1, K2	seminar, e-learning
23.	Diabetes Mellitus. Insulin Oral hypoglycaemic agents.	W1, W2, W3, U1, U2, U7, K1, K2	seminar, e-learning
24.	Treatment of diarrhea, constipation, nausea vomiting. Treatment of gastroesophageal reflux disorder (GERD), role of H2 receptors.	W1, W2, W3, W4, W5, U1, U2, U5, U7, K1, K2	e-learning

25.	Peptic ulcers, antiacids; antisecretory drugs.	W1, W2, W3, U1, U2, U7, K1, K2	e-learning
26.	Agents used to treat liver and pancreas disorders; inflammatory bowel disease, hepatitis.	W1, W2, W3, U1, U2, U7, K1, K2	e-learning
27.	Diuretics, antidiuretic drugs.	W1, W2, W3, W5, U1, U2, U7, K1, K2	seminar, e-learning
28.	Diseases of respiratory tract. Bronchodilator agents; agents used to treat asthma.	W1, W2, W3, W4, W5, U1, U2, U7, K1, K2	seminar, e-learning
29.	Decongestants; cough suppressants; antimicrobial agents used to treat patients with respiratory tract infections.	W1, W2, W3, W4, W5, U1, U2, U7, K1, K2	seminar, e-learning
30.	Anemia. Drugs affecting hematopoiesis Septicemia, bacteremia Blood and blood products.	W1, W2, W4, W5, U1, U2, U7, K1, K2	seminar, e-learning
31.	Introduction to cardiovascular pharmacology Treatment of congestive heart failure and acute heart failure.	W2, W3, W6, W7, W8, W9, U1, U2, U3, U7, K1, K2	e-learning
32.	Antiarrhythmic drugs. Resuscitation, treatment of shocks. Endocarditis.	W1, W2, U6, K1	seminar, e-learning
33.	Pharmacology of coagulation, fibrinolytic drugs.	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, K1, K2	e-learning
34.	Pharmacology of platelets and endothelium. Antiplatelet drugs.	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, K1, K2	seminar, e-learning
35.	Classification of anti-hypertensive drugs, current concepts in treatment of hypertension. Basic and clinical pharmacology of ACE inhibitors and angiotensin receptor antagonists, adrenolytics, diuretics, calcium channel blockers, potassium channels openers, direct vasodilators.	W1, W2, W3, W4, W5, W6	e-learning
36.	Atherothrombosis – current concepts on prevention and treatment. Drugs used in the treatment of hyperlipidemias Basic and clinical pharmacology of statins, fibrates, niacin, resins. Cholesterol-independent, pleiotropic effects of hypolipemic drugs.	W1, W2, W3, W4, W5, W6, W7, W8, W9, K1, K2	seminar, e-learning
37.	Drugs used in the treatment of ischemic heart disease. Acute coronary syndrome (myocardial infarction).	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, U7, K1, K2	e-learning

Course advanced

Semester 4

Teaching methods:

discussion, seminar, lecture

Activities	Examination methods	Credit conditions
seminar	multiple choice test	solving partial tests: I-II
e-learning	credit	attendance

Semester 5

Teaching methods:

case study, discussion, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	credit	attendance
seminar	multiple choice test	solving partial tests: III-IV

Semester 6

Teaching methods:

case study, classes / practicals, discussion, seminar, lecture

Activities	Examination methods	Credit conditions
seminar	test	writing partial tests V-VI
e-learning	multiple choice test	For those who will magnage over 80% from 6 test - they can be realeased from Final Examination Test (90 questions).

Entry requirements

basic knowledge of pharmacology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Hygiene

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** G. Law and organizational aspects of medicine

Period	**Examination**	**Number of ECTS points**
Semester 4	graded credit **Activities and hours** seminar: 20	1.0

Goals

C1	Acquisition of practical skills in health care and health promotion by students.
C2	Acquiring knowledge on estimating and minimizing environmental risks.
C3	Student introduction to selected environmental factors in the place of residence and work that affect human health and methods of monitoring the home and working environment.
C4	Civilizational diseases. To acquaint students with the issues of environmental conditions of carcinogenesis.
C5	To provide the student with the basics of knowledge on the evaluation of the state of nutrition and the manner of human nutrition, including nutrients in food, as well as vitamins and minerals and energy requirements.
C6	Development of awareness of the impact of lifestyle and diet on human health

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	written credit
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written credit
W3	methods of individual and population health assessment, different systems of disease classification and medical procedures	G.W1	written credit
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	written credit
W5	the importance of environmental xenobiotics, including their exogenous transformation and the role of biomarkers (exposure, effects, vulnerability) in the diagnosis of environmental and occupational diseases	G.W23	assignment report, written credit
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	assignment report, written credit
U2	identify medical problems and prioritize medical management	O.U1	written credit
U3	plan own learning activities and constantly learn in order to update own knowledge	O.U5	written credit
U4	communicate and share knowledge with colleagues in a team	O.U8	written credit
U5	collect information on the presence of risk factors for communicable and chronic diseases and plan prevention activities at different levels of prevention	G.U2	written credit
U6	cooperate with other professions in the field of health protection	G.U10	assignment report, written credit
U7	conducts community interview, is able to interpret levels of pollution in the aspect of effective standards, and is able to identify organs and systems susceptible to harmful substances, the performance of individual xenobiotics present in the environment and the working environment	G.U13	assignment report, written credit
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	written credit
K2	promote health-promoting behaviors	O.K6	written credit

Calculation of ECTS points

Activity form	Activity hours*
seminar	20
preparation for classes	5

preparation for examination	5
Student workload	**Hours** 30
Workload involving teacher	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Environment and human health	W1, W2, W3, U1, K1, K2	seminar
2.	Environmental biomonitoring: environmental monitoring and biological monitoring	W1, W2, W3, W4, W5, U1, U7, K1, K2	seminar
3.	Occupational diseases and environmental diseases at home.	W1, W2, W3, W4, W5, U1, U7, K2	seminar
4.	The basics of environmental determinants of civilizational diseases, with special interest on neoplastic diseases. .	W1, W2, W3, U1, K2	seminar
5.	Diet related diseases, hospital malnutrition, medical diets. Parenteral nutrition	W1, W2, W3, W4, U1, U2, U3, U4, U5, U6, K1, K2	seminar
6.	Assessment of nutritional status and nutrition. Energy in food: the body's energy needs, fat, fibre. Vitamins and minerals, interactions.	W1, W2, W3, U1, U3, U4, U5, K2	seminar

Course advanced

Teaching methods:

classes / practicals, computer classes, group work, seminar, simulated patient, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	assignment report, written credit	Obecność na zajęciach oraz prawidłowe wykonanie zadania.

Additional info

Every single meeting ends with a short test/quiz consisting of open or single choice-test questions. Students can earn max 6 points per meeting. To pass a course a minimum of 39 points must be obtained (65%).

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Microbiology with Parasitology and Immunology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 4	examination **Activities and hours** e-learning: 37, seminar: 16, laboratory: 27	6.0

Goals

C1	Familiarizing students with the biology and classification principles of pathogenic microorganisms and the mechanisms of their pathogenic impact on the human body.
C2	Presentation of transmission modes and methods to prevent the spread of infectious and parasitic diseases in the human population.
C3	Presentation of the principles of microbiological and parasitological diagnostics, proper collecting and sending samples for testing.
C4	Familiarizing students with the principles of proper aseptic and antiseptic procedures.
C5	Teaching students the correct selection of diagnostic methods and the proper interpretation of microbiological and parasitological tests results in the field of classical (microscopy and culture) as well as serological and molecular diagnostics.
C6	The course aims at presenting the general concepts of immunological processes and mechanisms underlying human immunity, with the sepcial emphasis on those, which understanding is important in the medical profession.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	micro-organisms, including pathogenic and present in the physiological flora	C.W12	multiple choice test
W2	epidemiology of viral and bacterial infections and infections with fungi and parasites, taking into account their geographical distribution	C.W13	multiple choice test
W3	the impact of abiotic and biotic (viruses, bacteria) environmental factors on the human body and human population and their pathways into the human body	C.W14	multiple choice test
W4	the consequences of human body exposure to various chemical and biological agents and the principles of prevention	C.W15	multiple choice test
W5	the principle of the parasite-host system and the principal disease symptoms caused by the parasites	C.W17	multiple choice test
W6	symptoms of iatrogenic infections, their pathways and pathogens causing changes in individual organs	C.W18	multiple choice test
W7	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management	C.W19	practical test, multiple choice test
W8	basic principles of disinfection, sterilization and aseptic management	C.W20	multiple choice test
W9	genetic mechanisms for the acquisition of drug resistance by microorganisms and cancer cells	C.W11	multiple choice test
W10	human-invasive forms or stages of parasitic fungi, protozoa, helminths and arthropods of selected parasitic species, taking into account their geographical distribution	C.W16	practical test, multiple choice test

W11	basic of development and mechanisms of immune system action, including specific and non-specific mechanisms of humoral and cellular immunity	C.W21	classroom observation, multiple choice test
W12	major histocompatibility complex	C.W22	multiple choice test
W13	types of hypersensitivity reactions, types of immunodeficiency and basicss of immunomodulation	C.W23	classroom observation, multiple choice test
W14	issues related to cancer immunology	C.W24	multiple choice test
W15	the genetic basis for donor and recipient selection and the basics for transplantation immunology	C.W25	multiple choice test
W16	benefits and threats resulting from the presence of genetically modified organisms (GMOs) in the ecosystem	C.W10	multiple choice test
Skills – Student can:			
U1	recognize the most frequent human parasites on the basis of their structure, life cycles and symptoms of illnesses	C.U7	practical test, multiple choice test
U2	prepare preparations and identify pathogens under the microscope	C.U9	classroom observation, practical test
U3	interpret the results of microbiological tests	C.U10	classroom observation, practical test, multiple choice test
U4	use the antigen-antibody reaction in current modifications and techniques for the diagnosis of infectious, allergic, autoimmune and neoplastic diseases and blood diseases	C.U8	classroom observation
U5	analyze reaction, defense and adaptation phenomena and regulatory disturbances caused by an etiological factor	C.U12	classroom observation
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	classroom observation, practical test
K2	use objective sources of information	O.K7	classroom observation
K3	promote health-promoting behaviors	O.K6	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	37
seminar	16
laboratory	27
preparation for classes	15
preparation for examination	53

participation in examination	2

Student workload	**Hours** 150
Workload involving teacher	**Hours** 80
Practical workload	**Hours** 27

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Morphology, physiology and methods of bacteria classification. Bacterial cell structure.	W1	e-learning
2.	The genome of bacteria. The basis of variation and transfer of genetic material bacteria. Bacterial resistance to antibiotics and chemotherapeutics.	W16, W9	seminar
3.	Physiological flora and mechanisms of the human microbiome formation.	W1	seminar
4.	Pathogenesis of bacterial infections. Bacterial virulence factors.	W3	seminar
5.	Bacterial etiological factors of infections in humans (Gram-positive and Gram-negative cocci, Gram-negative rods, Gram-positive sporulated and non-sporulated bacilli, anaerobic bacteria, mycobacteria, spirochetes, actinomyces, mycoplasma, chlamydia, rickettsia).	W1	seminar
6.	Epidemiology and prevention of bacterial infections. Anti-bacterial vaccines.	W2, W4	seminar
7.	Sterilization, disinfection and aseptic: principles and methods of disinfection and sterilization, the mechanism of disinfectants action, sterilization process control methods, the principle of good antiseptics.	W8	seminar, laboratory
8.	Hospital infection. Epidemiology and etiology.	W6	e-learning
9.	Basics of bacteriological diagnosis. Rules for collecting and sending of specimens for bacteriological testing. Gram staining and other staining methods. Methods of bacterial culture on artificial growth media.Isolation and selected methods of bacterial identification. Serological and molecular methods. Determination of bacterial resistance to antibiotics and chemotherapeutics. Interpretation of results.	W7, U2, U3, K1	seminar, laboratory
10.	Features of the structure and replication of viruses. Classification criteria for human pathogenic viruses.	W1	e-learning
11.	Biological and pathogenic properties of DNA and RNA viruses. Pathomechanism of viral infections.	W3	seminar

12.	Viral etiological factors of infections in humans: DNA viruses (herpeviruses, adenoviruses, poxviruses, parvoviruses, polyomaviruses, papillomaviruses), RNA viruses (ortomixo- and paramixo-viruses, coronaviruses, picornaviruses, astroviruses, caliciviruses, reoviruses, togaviruses, flaviviruses, filoviruses, rhabdoviruses , bunyaviruses and arenaviruses, retroviruses), hepatitis viruses. Prions.	W1	seminar
13.	Epidemiology of viral infections. Antiviral vaccines.	W2, W4	seminar
14.	Virological diagnostics. Collecting and sending of specimens for virological testing. Methods of virus isolation and identification. Serological and molecular diagnostics. Diagnostics of influenza and rubella viruses, diagnostics of hepatitis viruses, rotaviruses and enteroviruses, HIV diagnostics - methods and interpretation of test results. Molecular methods in the diagnostics of CMV, EBV, HSV and HPV. Resistance to antiviral drugs.	W7, U3, K1	seminar, laboratory
15.	Morphology and physiology of fungi. Classification criteria for human pathogenic fungi.	W1	e-learning
16.	Pathogenesis of fungal infections and etiological factors of fungal infections: yeasts, filamentous fungi (molds), dermatophytes and dimorphic fungi.	W1, W4	seminar
17.	Epidemiology and prevention of fungal infections.	W2, W4	e-learning
18.	Fungi as allergens. Mycotoxins and mycotocsicosis.	W4	e-learning
19.	Basics of medical mycological diagnostics. Collecting and sending of materials for mycological testing. Diagnostic methods: microscopy, culture, serological and molecular techniques. Determination of sensitivity to antifungal drugs. Interpretation of mycological test results.	W7, U2, U3, K1	seminar, laboratory
20.	Classification rules and general features of the structure of human parasites.	W1	laboratory
21.	Definition of parasitism. The host-parasite system and mechanisms of pathogenic interaction of parasites on the human (host) body. Basic disease symptoms associated with parasitoses.	W5	seminar
22.	Life cycles and invasive developmental stages of selected protozoa, worms and arthropods that parasitize in humans (Giardia intestinalis, Entamoeba histolytica and other creeps, Cryptosporidium, Balantidium coli, Trichomonas vaginalis, Trypanosoma, Leishmania, Plasmodium, and Babesia, Taenia, Diphyllobothrium, Echinococcus, Enterobius, Ascaris, Trichuris, Strongyloides and Ancylostoma, Trichinella and Toxocara, and ectoparasites: Sarcoptes, Pediculus, Phthirus, Demodex).	W10, U1	seminar, laboratory
23.	Epidemiology and prevention of parasitic infections.	W2, W4	seminar
24.	Parasitological diagnostics. Diagnostic materials - sampling and sending. Methods of parasitological diagnostics: microscopy (coproscopy), macroscopic examination of feces, culture methods (culture of flagellates) as well as serological and molecular diagnostics.	W7, U1, U2, U3, K1	seminar, laboratory

25.	Cells of the immune system. Organs of the immune system. Innate immunity	W11	e-learning
26.	Antigen-antibody interactions, complement system: Precipitation-based immunoassays (diffusion, immune-double diffusion, radial immunodiffusion, immunoelectrophoresis, rocket immunoelectrophoresis, countercourrent electrophoresis)	W11, U4, U5, K1	laboratory
27.	Antigens, Antibodies: Structure, Function. Monoclonal antibodies. Antibody genes and generation of diversity.	W12, W15	e-learning
28.	Major histocompatibility complex. Antigen processing and presentation. Generation of the humoral immune response.	W11, W12	e-learning
29.	Antigen – antibody interactions, complement system: agglutination- based immunoassays (haemagglutination) Enzyme linked immunosorbent assay (ELISA) Immunoblotting (Western blot)	W11, W13, U4, U5, K1, K2, K3	laboratory
30.	Cell-mediated immunity. Classical cellular response and delayed type hypersensitivity.	W11, W13, W14, W15	e-learning
31.	Cellular immunology and cellular immunology basic assays: NBT (Nitro-blue Tetrazolium Test) MACS (microbeads separation of cells) lymphocyte separation on gradient- Ficoll discontinuous gradient separation isolation of lymphocyte subpopulations - rosetting	W13, W15, U5, K2, K3	laboratory
32.	Cellular immunology and cellular immunology basic assays: dissection of mouse (demonstration) contact sensitivity reactions (in vivo assay in contact sensitivity (CS)) modern laboratory techniques in immunology – immunofluorescence (Fluorescence Activated Cell Sorter) FACS	W11, U4, U5, K1	laboratory
33.	Immune regulation and tolerance.	W11, W12, W13, W14, W15	seminar
34.	Inflammation. Hypersensitive reactions mediated by antibodies.	W11, W12, W13, W14	e-learning
35.	Immune responses to infection. Vaccines.	W11, W14, U5	e-learning

Course advanced

Teaching methods:

classes / practicals, laboratories (labs), preclinical classes, discussion, educational film, presentation, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	Final test (100 multiple-choice questions with one correct answer) covering topics covered during lectures, seminars and exercises in Immunology (40 test questions) and Microbiology with parasitology (60 questions). Assessment threshold: 60% correct answers (a 60% threshold is required for both Immunology and Microbiology with parasitology).

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Theoretical issues (Immunology) are included in the final test exam (MCQ exam) at the end of the course (semester 4).
laboratory	classroom observation, practical test, multiple choice test	Active participation in classes - student is required to perform a particular task (exercise) in accordance with the instructions indicated by the teacher and to interpret the results of microbiological / parasitological testing. Student is obliged to obtain a credit for all practical classes except those he was not present (maximum 2 in Microbiology with parasitology). Assessment of practical skills acquired by the student is carried out in each case during and at the end of the practical classes. Theoretical issues (Microbiology with parasitology and Immunology) are included in the final test exam (MCQ exam) at the end of the course (semester 4).

Additional info

1. Student receives the total final grade from the module: Microbiology with parasitology and Immunology.
2. The final grade is calculated based on the score obtained on the final examination test.
3. Final examination test – to pass the exam is obliged to get 60% correct answers, which is required to provide at least 60% of correct answers in the field of Immunology and at least 60% correct answers of Microbiology with parasitology. Obtaining less than 60% of correct answers in terms of any of the items in the first or in the second term leads to a lack of passing module.
4. Module passing is a subject to the following conditions:
    - Attendance of exercises and seminars (a maximum of 3 excused absences are allowed, with a maximum of 1 in Immunology classes and a maximum of 2 in Microbiology with parasitology).
    - Active participation in lab classes and performation a particular task (exercise) indicated by the teacher.
5. Final exam grading scale for Microbiology with Parasitology and Immunology:
   <60 points.; failed (2.0)
   60 – 67; satisfactory (3.0)
   68 – 75; satisfactory plus (3.5)
   76 – 83; good (4.0)
   84 – 91; good plus (4.5)
   92 – 100; very good (5.0)
6. NB! Please note! Owing to COVID-19 pandemic situation, there may be last minute modifications regarding the sylabus.
7. E-learning (ONLINE lectures) will currently replace traditional lectures.
8. We are hoping to conduct the labs and seminars at the university facilities.

Entry requirements

Biochemistry with elements of chemistry, Genetics with molecular biology.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Telemedicine with Elements of Medical Simulation

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** B. Scientific basics of medicine
Subject related to scientific research Yes	

Period	**Examination**	**Number of ECTS points**
Semester 4	graded credit **Activities and hours** classes: 30	2.0

Goals

C1	acquiring knowledge regarding the use of new information and communication technology (ICT) technologies used in patient diagnostics and therapy
C2	acquiring skills in using computer programs and systems used in modern medicine
C3	getting acquainted with e-learning tools in teaching medicine

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	basic IT and biostatistical tools used in medicine, including medical databases, spreadsheets and computer graphics basics	B.W26	multiple choice test
W2	the possibilities of modern telemedicine as a tool to support the work of a doctor	B.W28	multiple choice test
W3	on-line data presentation techniques	B.W36	assignment report, multiple choice test
W4	computer-aided decision support for medical decisions with particular emphasis on clinical pathway techniques	B.W39	project, multiple choice test
W5	basic techniques of representation of medical knowledge for intelligent computer systems in medicine	B.W40	multiple choice test
W6	elements of the hospital patient service system	B.W42	assignment report, multiple choice test
W7	selected online sources of medical information, with particular emphasis on genetic diseases, available on the Internet	B.W43	assignment report, multiple choice test
W8	principles of operation and organisation of teleconferences	B.W44	multiple choice test
W9	types of IT tools supporting the process of remote lifelong learning with particular emphasis on simulators available on-line	B.W45	assignment report, multiple choice test
W10	the types of data used in electronic medical records	B.W47	multiple choice test
W11	principles for the operation and use of electronic patient records	B.W49	multiple choice test
W12	the means of secure Internet communication	B.W38	multiple choice test
W13	concepts related to on-line data transmission	B.W41	multiple choice test
W14	the opportunities and limitations offered by new information technology simulation techniques on examples of selected European research projects	B.W46	multiple choice test
W15	principles for the development of databases for patient care and research	B.W48	assignment report, multiple choice test
Skills – Student can:			
U1	use databases, including online databases, and search for the necessary information using the available tools	B.U10	assignment report
U2	use on-line databases of the human genome	B.U23	assignment report
U3	use the Internet databases of genetic disorders	B.U24	assignment report
U4	use a telemedicine tool for teleconsultation purposes	B.U25	classroom observation
U5	use on-line photo, audio and video libraries	B.U21	classroom observation
U6	use various types of computer simulators and e-learning tools for educational purposes, with particular emphasis on virtual patients	B.U26	classroom observation, assignment report
U7	use computer simulators to support the medical decision-making process	B.U27	classroom observation, assignment report

U8	provide expert knowledge through simple IT techniques of knowledge representation such as a block diagram or a rule database	B.U28	project
U9	use e-learning platforms	B.U30	classroom observation
U10	plan and perform simple scientific research and interpret its results and draw conclusions	B.U13	assignment report
U11	use equipment for the reproduction of three-dimensional video images	B.U22	classroom observation
U12	protect clinical data against unauthorized access	B.U29	classroom observation, assignment report
U13	prepare materials for on-line presentations	B.U31	project
U14	understand the concept of meta-analysis and how to present its results	B.U20	classroom observation
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	classroom observation, assignment report
K2	formulate conclusions from own measurements or observations	O.K8	project
K3	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
K4	to be guided by the well-being of a patient	O.K2	classroom observation, assignment report

Calculation of ECTS points

Activity form	**Activity hours***
classes	30
preparation for classes	25
preparation for colloquium	5
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Searching for information in medical databases, data processing. Resources of The National Center for Biotechnology Information.	W12, W13, W15, W5, W7, W9, U1, U14, U2, U3, U7, K1, K4	classes
2.	Clinical Decision Support Systems (CDSS) – improving the quality of decision in medicine. Motivation behind CDSS and basic components. Decision trees, machine learning, probabilistic models.	W15, W4, W5, W9, U1, U14, U7, U8, K1	classes
3.	Medical 2D and 3D image processing. Using representative medical image viewers supporting the DICOM standard. Reconstruction of 3D models, performing 3D segmentation.	W3, W5, U1, U11, U5, U7, K3, K4	classes
4.	The use of e-learning methods in medical education. Benefits of using e-learning in various scenarios in order to improve the quality of education in medicine. Virtual Patient.	W14, W5, W9, U5, U6, U7, U9, K1	classes
5.	Clinical pathway. Implementation of your own project regarding the clinical pathway. Discussion in group forum on the presented approach.	W4, W5, U7, U8, K1	classes
6.	Issues of modern telemedicine. A modern approach to support the doctor's work, using remote access technologies. Practical operation of the TeleDICOM medical consultation system.	W10, W11, W12, W13, W2, W3, W6, W8, U12, U13, U4	classes
7.	Modeling and simulation in medicine. Performing experiments on computer models in Matlab. The use of augmented reality in medicine. Presentation of holographic structures in the Hololens system.	W1, W13, W15, W3, W5, W9, U10, U7, K2	classes
8.	Medical robots and tele-surgery. Rules for creating programs controlling the operation of an educational robot with the possibility of interactive impact.	W2, U7, K2	classes
9.	3D technologies in medicine. Presentation of the principles of creating 3D graphics and the use of 3D printing as a rapidly developing and perspective technology in modern medicine.	W1, W3, U11, U5	classes
10.	Applications for mobile devices in medical education. Performing practical exercises and review of the functionality and usefulness of tested applications.	W2, W5, W9, U5, U7, K1	classes

Course advanced

Teaching methods:

case study, computer classes, classes in simulated conditions, demonstration, discussion, e-learning, educational film, group work, computer room, assignments solving, simulation, low fidelity simulation, virtual patient, PBL Problem Based Learning, practical classes in simulated conditions

Activities	Examination methods	Credit conditions
classes	classroom observation, project, assignment report, multiple choice test	attendance and active participation during classes

Additional info

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Primary Care - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group** I. Professional practice

Period	**Examination**	**Number of ECTS points**
Semester 4	credit **Activities and hours** professional practice: 90	3.0

Goals

C1	Familiarizing student with the scope of family doctor’s responsibilities, organization and works of the GP office, exposing student to various minor and emergency procedures, as well as acquainting student with outpatient care diagnostic service system.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice
Skills – Student can:			

U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practice
U2	communicate and share knowledge with colleagues in a team	O.U8	booklet of practice
U3	plan own learning activities and constantly learn in order to update own knowledge	O.U5	booklet of practice
U4	identify medical problems and prioritize medical management	O.U1	booklet of practice
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	booklet of practice
K2	respect medical confidentiality and patients' rights	O.K3	booklet of practice
K3	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	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	90

Student workload	**Hours** 90
Workload involving teacher	**Hours** 90
Practical workload	**Hours** 90

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Family Medicine segment: 1. obtain information on the scope of family doctor's responsibilities, organization of training and methods of keeping medical records; 2. learn sanitary education methods and participation in prophylactic activities; 3. obtain theoretical and possibly practical knowledge of emergency procedures, including desmurgy techniques; 4. assist family doctors in seeing patients in the clinic and on house calls, helping in minor medical procedures; 5. become acquainted with the organization of diagnostic services system in outpatient care, in the scope of examinations, tests and test specimens collection; 6. if possible, participate in performing chosen diagnostic procedures (blood pressure taking, sugar level measurement with a glucometer, electrocardiography, spirometry).	W1, U1, U2, U3, U4, K1, K2, K3	professional practice

Course advanced

Teaching methods:

professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC SME Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Additional info

Head of Outpatient Clinic (for Family Doctor segment of the clerkship) and Head of the Emergency Care/Chief of the Emergency Medical Ward (for Emergency Medicine segment), or a preceptor assigned by him/her, determines scope of responsibilities and the clerkship schedule, and oversees the student's work. The preceptor should be a physician with adequate general and professional competence.
If possible, student should perform all medical activities under supervision of the preceptor.

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Emergency Medicine - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2021/22
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group** I. Professional practice

Period	**Examination**	**Number of ECTS points**
Semester 4	credit **Activities and hours** professional practice: 30	1.0

Goals

C1	Familiarizing student with the scope of family doctor’s responsibilities, organization and works of the GP office, exposing student to various minor and emergency procedures, as well as acquainting student with outpatient care diagnostic service system.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice
Skills – Student can:			

U1	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practice
U2	communicate and share knowledge with colleagues in a team	O.U8	booklet of practice
U3	plan own learning activities and constantly learn in order to update own knowledge	O.U5	booklet of practice
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	booklet of practice
K2	respect medical confidentiality and patients' rights	O.K3	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	30

Student workload	**Hours** 30
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Primary Care segment: 1. become acquainted with the scope of duties of an Emergency Unit; 2. assist in giving first aid to patients and examining patients during house calls; 3. serve as paramedics on general medical aid, resuscitation, accident, pediatric, and gynecological-obstetrical ambulance crews; 4. learn procedures used in life threatening conditions.	W1, U1, U2, U3, K1, K2	professional practice

Course advanced

Teaching methods:

professional practice

Activities	**Examination methods**	**Credit conditions**

Activities	Examination methods	Credit conditions
professional practice	booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC SME Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Additional info

Head of Outpatient Clinic (for Family Doctor segment of the clerkship) and Head of the Emergency Care/Chief of the Emergency Medical Ward (for Emergency Medicine segment), or a preceptor assigned by him/her, determines scope of responsibilities and the clerkship schedule, and oversees the student’s work. The preceptor should be a physician with adequate general and professional competence.
If possible, student should perform all medical activities under supervision of the preceptor.

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Surgery

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23, 2023/24, 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** A. Morphological education, B. Scientific basics of medicine, C. Preclinical course, F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** seminar: 35, classes: 57, e-learning: 34	7.0

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** e-learning: 24, seminar: 8, classes: 44, simulations: 12	5.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** e-learning: 6, seminar: 33, classes: 42	5.0

Periods	Examination	Number of ECTS points
Semester 11, Semester 12	examination **Activities and hours** clinical classes: 120	8.0

Goals

C1	E.U14. recognizes the states of immediate danger of life; E.U35. evaluates bedsores and apply the appropriate dressings; F.W1. knows and understands the causes, symptoms, principles of diagnosis and therapeutic treatment in relation to the most common diseases requiring surgical intervention, taking into account the individuality of childhood, in particular: a) acute and chronic diseases of the abdominal cavity, b) diseases of the chest, c) diseases of limbs and head d) fractures and injuries of organs; F.W3. knows the rules of qualifications and performance and the most common complications of basic surgeries and invasive diagnostic and therapeutic procedures; F.W14. knows in the basic scope the problem of surgical transplantation, indications for transplantation irreversibly damaged organs and tissues and related procedures; F.U1. assists with typical surgery, prepares operative field and locally anesthetized the operated area; F.U2. uses basic medical sharps; F.U3. apply the principles of aseptic and antiseptic; F.U4. supplies a simple wound, assumed and changes sterile surgical dressing; F.U5. assumes the peripheral venous catheter; F.U6. examines nipples, lymph nodes, thyroid gland and the abdominal cavity in terms of acute abdomen and exercise test with finger through the anus;

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the causes, symptoms, diagnostic and therapeutic management principles for the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age, including in particular: 1) acute and chronic abdominal diseases, 2) thoracic diseases, 3) diseases of extremities and head, 4) fractures of bones and injuries to organs	F.W1	test, gap filling test
W2	selected issues in the field of pediatric surgery, including traumatology and otorhinolaryngology, as well as acquired defects and diseases being indications for surgical treatment in children	F.W2	test
W3	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	test
W4	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	test
W5	postoperative treatment with analgesic therapy and postoperative monitoring	F.W5	test
W6	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age and in particular: a) diseases of arterial and venous vessels b) diseases of the urinary tract c) heart and blood vessel diseases d) craniofacial diseases, acute and chronic diseases of the central nervous system	F.W17	test

W7	the rules of qualification, what they consist of, how they take place and what are the possible complications and consequences of surgical procedures: a) removal of appendix, gallbladder b) excision of the thyroid, parathyroid, adrenal glands c) excision of part and entirety of the stomach, large intestine d) abdominal hernias, using synthetic mesh e) surgical treatment of obesity	F.W20	test
W8	the qualifications rules, knows what they are, how they work and what are the possible consequences and complications of the following procedures: a) percutaneous and intraductive abdominal organ ultrasonography f) b) endoscopic gastrointestinal diagnostic and therapeutic procedures c) endoscopic diagnostic and respiratory therapeutic procedures (bronchoscopy, endoscopic ultrasound bronchoscopy) d) endoscopic diagnostic and therapeutic procedures for the urinary tract (cystoscopy) e) endoscopic diagnostic and therapeutic procedures for the locomotor system (arthroscopy) f) screening tests used for the early detection of gastrointestinal neoplasms	F.W21	test
W9	the most common complications of the procedures listed in F.W2	F.W18	test
W10	in the basic scope, the issues of surgical transplantation, indications for transplantation of irreversibly damaged organs and tissues and the procedures related thereto	F.W14	test
Skills – Student can:			
U1	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	F.U1	booklet of practical skills, classroom observation
U2	use basic surgical instruments	F.U2	booklet of practical skills, classroom observation
U3	adhere to the principles of asepsis and antisepsis	F.U3	booklet of practical skills, classroom observation
U4	manage a simple wound, put on and change a sterile surgical dressing	F.U4	booklet of practical skills, classroom observation
U5	make a peripheral puncture	F.U5	booklet of practical skills, classroom observation
U6	examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination	F.U6	booklet of practical skills, classroom observation
U7	manage external bleeding	F.U9	booklet of practical skills, classroom observation
U8	can tie a single and surgical knot	F.U28	booklet of practical skills, classroom observation
U9	can perform and interpret FAST ultrasound (Focused Assessment with Sonography for Trauma)	F.U30	booklet of practical skills, classroom observation
U10	insert a drain into the pleural cavity and connect the set for an active pleural drain	F.U31	booklet of practical skills, classroom observation
U11	insert a catheter into the bladder	F.U32	booklet of practical skills, classroom observation

U12	to take the informed and legally effective consent: a) for high-risk diagnostic procedures (e.g. gastroscopy, colonoscopy), endoscopic retrograde cholangiopancreatography) b) for high-risk diagnostic procedures (transcutaneous biopsy under control) USG) c) surgery to remove the gallbladder	F.U33	booklet of practical skills, classroom observation
U13	to pass on information about the death of a close friend and relative	F.U34	booklet of practical skills, classroom observation
U14	assess the indications for suprapubic puncture and participate in its performance	F.U23	booklet of practical skills, classroom observation
U15	assist in typical urological procedures (diagnostic and therapeutic endoscopy of the urinary tract, lithotripsy, prostate puncture)	F.U24	booklet of practical skills, classroom observation
U16	can examine the breasts, the abdomen and perform a digital rectal examination	F.U29	booklet of practical skills, classroom observation
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation
K3	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
K4	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

Calculation of ECTS points

Semester 5, Semester 6

Activity form	**Activity hours***
seminar	35
classes	57
e-learning	34
preparation for classes	30
preparation for examination	30

Student workload	**Hours** 186
Workload involving teacher	**Hours** 126
Practical workload	**Hours** 57

* hour means 45 minutes

Semester 7, Semester 8

Activity form	Activity hours*
e-learning	24
seminar	8
classes	44
simulations	12
preparation for classes	30
preparation for colloquium	30
Student workload	**Hours** 148
Workload involving teacher	**Hours** 88
Practical workload	**Hours** 56

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*
e-learning	6
seminar	33
classes	42
preparation for classes	30
preparation for examination	30
Student workload	**Hours** 141
Workload involving teacher	**Hours** 81
Practical workload	**Hours** 42

* hour means 45 minutes

Semester 11, Semester 12

Activity form	Activity hours*

clinical classes	120
preparation for classes	30
preparation for examination	30

Student workload	**Hours** 180
Workload involving teacher	**Hours** 120
Practical workload	**Hours** 120

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Examination and diagnosis of the patient with acute abdomen	W1, U12, U16, U6, U9, K2	seminar, e-learning, clinical classes
2.	Body composition	W6	seminar
3.	Shock	W1, W6, U5, U7, U9	seminar, e-learning, clinical classes
4.	Acute abdomen	W1, W3, W4, W7, U1, U2, U8	seminar, e-learning, clinical classes
5.	Hernias	W1, W3	seminar, clinical classes
6.	Thyroid and parathyroid glands.	W3, W7	seminar, clinical classes
7.	Congenital malformations of the gastrointestinal tract	W2	seminar, e-learning, clinical classes
8.	Burns in children	W2, U3, U4	seminar, clinical classes
9.	Pediatric thoracic surgery	W1, W2, U10	seminar, clinical classes
10.	Head injuries in children. Congenital malformations of the nervous system.	W2, K1, K4	seminar, e-learning, clinical classes
11.	Congenital malformations of the urinary tract.	W2, U11	seminar, e-learning, clinical classes
12.	Congenital heart defects.	W1, W10, W6, U7	seminar, e-learning, clinical classes
13.	Thoracic cavity diseases.	W1	seminar, e-learning, clinical classes
14.	Diseases of the bile ducts.	W3, W7, W9, U1, U2, U4	seminar, clinical classes
15.	Colon cancer.	W1, W7, W9, U13	seminar, clinical classes
16.	Bariatric and metabolic surgery	W4, W7, K3, K4	seminar, e-learning, clinical classes
17.	Perioperative care (ERAS).	W3, W4, W5	seminar, clinical classes

18.	Pancreas.	W1	seminar, e-learning, clinical classes
19.	Rules for qualifying for cardiac surgery and postoperative management.	W6	seminar, clinical classes
20.	Surgery in acute cardiological conditions ("acute heart").	W6	seminar, clinical classes
21.	Principles of anticoagulation (cardiovascular system).	W6	seminar, clinical classes
22.	Anatomy. Abdominal and pelvic walls - abdominal wall structure - groin anatomical structures - laparoscopic images of inguinal region anatomy on a corpse - pelvic wall construction	W1	seminar, clinical classes
23.	Anatomy. Stomach pain - innervation of the abdominal walls and abdominal organs - innervation of the pelvic walls and pelvic organs - visceral pain - somatic painsc	W1	seminar, clinical classes
24.	Abdominal hernia anatomy.	W1	seminar, clinical classes
25.	Anatomy. Peritoneum - peritoneal cavities - mesenteries and their contents	W1	seminar, clinical classes
26.	Anatomy. Glandular floor - topographic anatomy of the esophagus - construction of the esophagus wall - stomach topographic anatomy - vascularization and innervation of the stomach - duodenum - pancreas - liver - spleen	W1	seminar, clinical classes
27.	Anatomy: Pelvic organs - rectum	W1	seminar, clinical classes
28.	Hepatobiliary surgery.	W1, W7	seminar, clinical classes
29.	Gastric surgery	W1, W3, W7	seminar, clinical classes
30.	Endoscopy	W8, U12, U9	seminar, clinical classes
31.	Brest surgery	W1, U6	seminar, clinical classes
32.	Pancreatic cancer	W1, W3	e-learning
33.	Gastric cancer	W1, W7	e-learning
34.	Colorectal cancer	W1, W7	e-learning
35.	Introduction to urology seminars. The role of a family doctor in diagnosing urological diseases. Symptomatology of urological diseases. Imaging diagnostics in urology (USG; CT; MR; scintigraphy; urodynamics). Urological instruments. Basic urological procedures. Specific and unspecific inflammations of the genitourinary organs.	W1, U11, U14, U15	seminar, clinical classes

36.	Neoplasms of urinary organs in both sexes and male reproductive system: kidneys, ureter, bladder, urethra, prostate, testicles, penis.	W1, U11, U14, U15	seminar, clinical classes
37.	Urological emergencies. Urogenital injuries - conservative and surgical treatment.	W1, U11, U14, U15	seminar, clinical classes
38.	Male genital diseases. Diseases of the prostate gland. Andropause. Erectile dysfunction.	W1, U11, U14, U15	seminar, clinical classes
39.	Urolithiasis including modern treatment methods: ESWL, PCNL, URS. Urinary incontinence in men and women. Basic knowledge of gynecological urology.	W1, U11, U14, U15	seminar, clinical classes
40.	Selected problems of maxillofacial surgery.	W6	seminar, clinical classes
41.	Intracranial hypertension. Clinical symptomatology, recognition. Treatment. Craniocerebral injuries. Fractures of the skull bones (vaults and bases). Intracranial hematomas. Diffuse axonal injury.	W6	seminar, clinical classes
42.	Tumors of the brain and spinal canal.	W6	seminar, clinical classes
43.	Central nervous system malformations.	W6	seminar, clinical classes
44.	Spinal pain syndromes.	W6	seminar, clinical classes
45.	Laboratory teaching of surgical skills.	U13, U2, U3, U4, U5, U8	classes, simulations

Course advanced

Semester 5, Semester 6

Teaching methods:

clinical classes, OSCE examination, seminar, simulation, practical classes

Activities	Examination methods	Credit conditions
seminar	classroom observation, test	Student activity, presence
classes	booklet of practical skills	Student activity, presence
e-learning	test	Written or oral exam, presence

Semester 7, Semester 8

Teaching methods:

clinical classes, e-learning, seminar, simulation, lecture

Activities	Examination methods	Credit conditions
e-learning	gap filling test	Student Activity, presence
seminar	classroom observation	Student activity, presence
classes	classroom observation	Student acrtivity, presence
simulations	classroom observation	Oral exam, presence

Semester 9, Semester 10

Teaching methods:

clinical classes, laboratories (labs), e-learning, seminar, simulation

Activities	Examination methods	Credit conditions
e-learning	gap filling test	Oral exam, presence
seminar	classroom observation	Student activity, presence
classes	booklet of practical skills	Student activity, presence

Semester 11, Semester 12

Teaching methods:

clinical classes, e-learning, seminar, simulation, lecture

Activities	Examination methods	Credit conditions
clinical classes	classroom observation	Student activity, presence, Written exam

Additional info

Entry requirements

Passed Anatomy and Labolatory Training of Clinical Skills

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Internal Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23, 2023/24, 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, C. Preclinical course, E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** classes: 78, seminar: 52	7.0

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** e-learning: 2, seminar: 42, classes: 61	8.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** seminar: 35, classes: 77	7.0

Periods	Examination	Number of ECTS points
Semester 11, Semester 12	examination **Activities and hours** clinical classes: 240	16.0

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 basicss 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, 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.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 law teperature, 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

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*
e-learning	2
seminar	42
classes	61
preparation for classes	30
preparation for test	15
Student workload	**Hours** 150
Workload involving teacher	**Hours** 105
Practical workload	**Hours** 61

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*

seminar	35
classes	77
preparation for examination	15
preparation for classes	15
case analysis	10

Student workload	**Hours** 152
Workload involving teacher	**Hours** 112
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**

1.	Introduction to Internal Medicine Semester 5 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 20 hours of seminars and 40 hours of bed-side teaching, which include: history taking, patient's examination, diagnostic test planing, and disscusion of differential diagnosis. Bed-side teaching: H (8h) 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 E (8 h) 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) ; K (8h) 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; G (8h) 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 (8h) 1 Asthma, COPD; 2 Sputum, Diagnosis of haemoptysis, Cough, Pneumonia, Pulmonary embolism; 3 Respiratory examinations: thorax, spirometry introduction; 4 Thorax examination, breast assessment;	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	classes, seminar, clinical classes

2.	Cardiology and Angiology: Semester 6 (Seminar 8 h; teaching ward round 4 h) ECG: a systematic approach Introduction to heart failure ECHO in cardiology Acute coronary syndromes. Assess coronary risk following myocardial infarction Semester 7/8 (Seminar 12 h; teaching ward round 12 h) Bradycardia Pacing therapy Narrow / wide QRS tachycardia Ablations Stable angina (recently diagnosed) Pulmonary hypertension Diagnosis and treatment of chronic heart failure Diagnose and manage endocarditis Congenital heart disease in adults. Valve disease in adult Semester 9/10 (Seminar 6h; teaching ward round 6h) Introduction to invasive cardiology. The role for thrombolysis and catheterization /angioplasty in ACS and elective procedures. Differential diagnosis of chest pain and dyspnea – focus on stable angina. Diagnostic workup and treatment of NSTEMI, UA, pulmonary embolism, aortic aneurysm. Angiology: Acute aortic syndromes Peripheral arterial diseases: diagnosis and treatment. Venous thromboembolism: prevention, diagnosis and treatment.	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	classes, seminar, clinical classes

3.	Pulmonology Semester 7/8 (Seminar 8h; teaching ward round 8h) 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 Semester 6 (Seminar 8 h; teaching ward round 4 h) 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.	Endocrinolgy and Metabolic Diseases ENDOCRINOLOGY Semester 9/10 (Seminar 8h; teaching ward round 8h) Anterior pituitary: signs and symptoms of Cushing disease, acromegaly and prolactinoma. Disorders of the thyroid gland: Hypothyroidism Hyperthyroidism and thyrotoxicosis Thyroiditis Thyroid nodules and thyroid cancer; Disorders of the paratyhroid function Metabolic bone disease: Osteoporosis treatment and prophylaxis The adrenal cortex: Primary adrenocortical insufficiency (Addison's disease) Disorders of adrenal medullary function – pheochromocytoma METABOLIC DISEASES Semester 6 (Seminar 6 h; teaching ward round 3 h) Classification and clinical features of diabetes. Chronic complications of diabetes Acute complications of diabetes. Diabetic ketoacidosis. Insulinotherapy Familial hypercholesterolemia: diagnosis and treatment	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	classes, seminar, clinical classes

6.	Nephrology Semester 7/8 (Seminar 6h; teaching ward round 6h) 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 Semester 6 (Seminar 8 h; teaching ward round 4 h) 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 Semester 9/10 (Seminar 4h; teaching ward round 4h) 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.	Allergology Semester 9/10 (Seminar 8h; teaching ward round 8h) Anaphylaxis - causes, symptoms and treatment Allergic rhinitis Atopic dermatitis Asthma and anaphylaxis. SLE and systemic vasculitis Autoimmune diseases – pathology, symptoms and sign. Hypersensitivity, allergy and atopy. Bronchial asthma – etiology, classification and treatment Aspirin-induced asthma Laboratory diagnosis in allergy and immunology Environmental allergens/ haptens – low and high molecular weight antigens Allergy and hypersensitivity in polluted areas Pathomechanism of allergy in polluted environment Immune recognition of drugs (The hapten and prohapten concept. The p-i concept) Classification of drug hypersensitivity reactions (Antibody-mediated and T cell-mediated drug hypersensitivity) Systemic drug reactions: severe drug hypersensitivity syndromes Diagnosis of drug hypersensitivity (Clinical diagnosis. Identifying the culprit drug) Therapeutic aspects (Desensitization) In vitro allergy testing in the laboratory Monitoring of concentration of environmental airborne allergens and irritants at the workplace. Bakers' asthma; anaphylactic reactions to latex, skin disorders caused by environmental factors.	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	classes, seminar, e-learning

10.	Toxicology Semester 9/10 (Seminar 4h; teaching ward round 4h) The role and importance of toxicological information centers Selected pharmacokinetic problems in clinical toxicology Basic principles of therapeutic management in acute poisoning Specific clinical symptoms and organ damage. Selected organ damage: toxic and drug-induced liver damage, rhabdomyolysis. Diagnosis and handling of selected poisons: addictive substances, alcohols, toxic gases, heavy metals, plant protection products, corrosive substances	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	classes, seminar
11.	Practical occupational learning Semester 11/12 240 hours 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.	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	clinical classes

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 folllowing componets will connstitute the evaluation: assistant evaluation, at lest 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 folllowing componets will connstitute the evaluation: assistant evaluation, at lest 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, e-learning, seminar, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
e-learning	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 folllowing 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.

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Dermatology and Venerology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	examination **Activities and hours** seminar: 30, classes: 28	3.0

Goals

C1	Understanding the symptomatology of the most common dermatological diseases and the correct dermatological terminology.
C2	Understanding the etiopathogenesis, epidemiology, clinical picture, diagnostics and dermatological therapy of the most common infectious and non-infectious diseases of the skin, hair, nails and mucous membranes.
C3	Understanding etiopathogenesis, epidemiology, clinical picture, diagnosis and therapy of birthmarks, benign and malignant skin cancers.
C4	Understanding skin changes associated with diseases of internal and systemic organs.
C5	Poznanie etiopatogenezy, epidemiologii, obrazu klinicznego, diagnostyki i terapii chorób przenoszonych drogą płciową.
C6	Acquiring the ability to properly collect anamnesis and conduct a physical examination in terms of dermatological diseases and to draw conclusions in the form of proposals for diagnosis, differentiation, additional tests and treatment.

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	written examination
W2	symptoms and course of diseases	O.W2	written examination
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written examination
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, oral credit
W5	methods of conducting scientific research	O.W5	written examination
W6	environmental and epidemiological determinants of the most frequent diseases	E.W1	written examination
W7	basic features, environmental and epidemiological conditions of the most common human skin diseases	E.W35	written examination
W8	the causes, symptoms, principles of diagnosis and therapeutic management of the most common sexually transmitted diseases	E.W36	written examination
W9	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	written examination
W10	theoretical and practical basics of laboratory diagnostics	E.W40	written examination
W11	epidemiological problems of infectious diseases in the world and in Poland	E.W48	written examination
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	oral examination, oral credit
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	oral examination, oral credit
U3	plan the diagnostic procedure and interpret its results	O.U3	written examination
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	written examination
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	written examination
U6	inspire the learning process of others	O.U6	oral credit
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	oral examination
U8	communicate and share knowledge with colleagues in a team	O.U8	oral credit
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	oral credit

U10	carry out a medical history with an adult patient	E.U1	oral examination
U11	conduct a full and targeted physical examination of an adult patient	E.U3	oral examination
U12	assess the general condition, state of consciousness and awareness of the patient	E.U7	oral examination
U13	perform differential diagnosis of the most common diseases of adults and children	E.U12	oral examination
U14	plan diagnostic, therapeutic and prophylactic procedures	E.U16	oral examination
U15	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	written examination
U16	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	written examination
U17	qualify the patient for home and hospital treatment	E.U20	oral examination
U18	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
U19	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	written examination
U20	interpret pharmaceutical characteristics of medicinal products and critically assess advertising materials for medicines	E.U31	written examination
U21	plan specialist consultations	E.U32	oral examination
U22	maintain patient's medical records	E.U38	oral examination
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	oral examination
K2	to be guided by the well-being of a patient	O.K2	oral examination
K3	respect medical confidentiality and patients' rights	O.K3	oral examination
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	oral examination
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral examination
K6	promote health-promoting behaviors	O.K6	oral examination, oral credit
K7	use objective sources of information	O.K7	oral credit
K8	formulate conclusions from own measurements or observations	O.K8	written examination, oral credit
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	oral examination, oral credit

K10	formulate opinions on the various aspects of the professional activity	O.K10	written examination
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	oral examination, oral credit

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
classes	28
preparation for examination	30

Student workload	**Hours** 88
Workload involving teacher	**Hours** 58
Practical workload	**Hours** 28

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Physiology and pathology of the skin	W1, W2, W7, U1, K6, K7, K8	classes, seminar
2.	Bacterial, viral and fungal infections of the skin	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
3.	Skin aging	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

4.	Erythema and skin drug reactions	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
5.	Allergic skin diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
6.	sexually transmitted diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
7.	Connective tissue diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
8.	Basics of dermoscopy. Melanocytic nevi.	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	seminar
9.	Seborrheic skin diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	seminar

10.	Bullous skin diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	seminar
11.	Skin cancers, precancerous conditions, in situ cancers.	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	seminar
12.	Skin changes in the course of internal medicine diseases	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
13.	Selected aspects of pediatric dermatology	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes
14.	Basics of topical treatment in dermatology	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes
15.	Interventional dermatology and dermatosurgery	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes

16.	photodermatoses	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
17.	Cutaneous lymphomas	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
18.	Alopecia and other hair and scalp diseases. Diseases of the nail.	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar
19.	Melanoma and NMSC.	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, classes in simulated conditions, demonstration, discussion, e-learning, problem solving method, project method, case study method, presentation, group work, assignments solving, seminar, workshop, lecture, lecture with multimedia presentation, PBL Problem Based Learning, practical classes, Tutoring

Activities	Examination methods	Credit conditions
seminar	written examination, oral examination	uzyskanie odpowiedniej liczby punktów
classes	written examination, oral examination, oral credit	uzyskanie odpowiedniej liczby punktów

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Epidemiology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** G. Law and organizational aspects of medicine
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 25	2.0

Goals

C1	-to teach students about methods of the assessment of population health status, and to provide knowledge about modifiable and non-modifiable determinants of health
C2	-to provide knowledge about research methods to identify and/or confirm risk the role of risk factors in the disease prevalence
C3	-to disseminate knowledge about communicable disease epidemiology, including methods to identify communicable disease outbreaks, guidelines to control outbreaks and methods to prevent outbreak development and spread
C4	-to create awareness about issues related to epidemics of communicable and non-communicable disease
C5	-to provide students with up-to-date trends in epidemiology development, including the role of molecular epidemiology
C6	-to show the role of epidemiology in the preparation of recommendations

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the identification and testing of risk factors, the advantages and disadvantages of different types of epidemiological studies and measures demonstrating the presence of cause and effect relationships	G.W2	written examination, test
W2	epidemiology of infectious and chronic diseases, ways of preventing their occurrence at various stages of the natural history of the disease and the role of epidemiological surveillance	G.W3	written examination, group assessment, test
W3	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	written examination, test
W4	methods of conducting scientific research	O.W5	written examination, group assessment, test
W5	legal regulations and basic methods of medical experimentation and other medical research, including basic methods of data analysis	G.W8	written examination, test
W6	methods of individual and population health assessment, different systems of disease classification and medical procedures	G.W1	written examination, group assessment, test
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation, group assessment
U2	inspire the learning process of others	O.U6	classroom observation, group assessment
U3	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, group assessment
U4	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, group assessment
U5	describe the demographic structure of the population, and based on that assess the health problems of the population	G.U1	written examination, classroom observation, group assessment
U6	collect information on the presence of risk factors for communicable and chronic diseases and plan prevention activities at different levels of prevention	G.U2	classroom observation, group assessment
U7	interpret the measures of the incidence of diseases and disabilities	G.U3	written examination, classroom observation, group assessment, test
U8	assess the epidemiological situation of diseases commonly found in the Republic of Poland and in the world	G.U4	classroom observation, group assessment
Social competences – Student is ready to:			
K1	promote health-promoting behaviors	O.K6	classroom observation, group assessment

K2	use objective sources of information	O.K7	classroom observation, group assessment
K3	formulate conclusions from own measurements or observations	O.K8	classroom observation, group assessment

Calculation of ECTS points

Activity form	Activity hours*
seminar	25
preparation for classes	15
preparation for examination	7
preparation of multimedia presentation	5
information collection	3
consultations with lecturer	2
kształcenie samodzielne	3

Student workload	**Hours** 60
Workload involving teacher	**Hours** 25

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The basics of demography. Demographic measures. The role of demography in epidemiology. Demographic determinants of disease prevalence.	W1, W2, U5, K2, K3	seminar
2.	Aims and tasks of epidemiology. The role of epidemiology in the assessment of risk factors responsible for health status of the populations and individuals. The assessment of prevalence and size health related outcomes in human populations. Methods of population health status diagnosis. Source of information. Descriptive epidemiology of non-communicable disease in Poland and worldwide. Communicable and non-communicable disease epidemics.	W2, U6, U7, U8, K2, K3	seminar
3.	Communicable disease epidemiology. Epidemiological process and epidemiological triangle. Types of epidemic. The rules to control communicable disease outbreak.	W1, W2, W6, U1, U6, U7, U8, K2, K3	seminar

4.	The rules and the roles of surveillance. The role of epidemiological research in communicable disease prevention. Epidemiology of hospital acquired infections.	W1, W2, W6, U1, U6, U7, U8, K2, K3	seminar
5.	Epidemiological investigation. The control of communicable disease outbreak in practice.	W1, W2, U1, U2, U3, U6, U7, K2, K3	seminar
6.	The strategy of research in epidemiology. The role of epidemiologic descriptive studies in hypothesis generating about disease etiology and to verify cause-effect relationship. Planning, realization and interpretation of results in case-control studies.	W1, W4, W5, W6, U1, U2, U4, U6, U7, K2, K3	seminar
7.	Planning, realization and interpretation of results in cohort studies. Randomized controlled trials in epidemiology and clinical medicine. Epidemiologic studies in disease of unknown origin.	W1, W4, W5, W6, U1, U2, U3, U4, U7, K2, K3	seminar
8.	Basics of molecular epidemiology. The role of molecular epidemiology in the disease risk assessment. The role of biomarkers.	W1, W3, U1, U6, K2, K3	seminar
9.	The role of epidemiology in the preparation of recommendations in the area of prevention and treatment.	W1, W2, W4, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3	seminar

Course advanced

Teaching methods:

brainstorm, preclinical classes, discussion, e-learning, problem solving method, case study method, presentation, group work, assignments solving, seminar

Activities	Examination methods	Credit conditions
seminar	written examination, classroom observation, group assessment, test	The assessment of knowledge: based on the final exam. The cut-off criterion for the exam >=60%. In a case if student failed any term of the final exam, he/she fails the course (grade: 2.0). The assessment of skills: based on: I. given presentation and discussion during the no 9 seminar - detailed criteria will be provided during the course, and II: written assignment about an investigation of communicable/or non-communicable disease outbreak – the assessment criteria: student should follow steps required in the investigation, correct identification of source, and should propose correct prevention measures (assessment scored in %, depending on the criteria fulfilment 0-100%). The skill part is passed if student receives >50% of the total score. The first term final exam is a MCQ test, 40 questions. The second term final exam is dated on the exam sessions for re-takers and consists of 5 (five) open questions. Answers for each question are scored from 0 to 5 points (with intervals of 0.5 pts) Final grade takes into account both, the skills and , the knowledge parts and is calculated as a weighting average (proportion 1:2 respectively) as a) The skills part being an average from I and II as aforementioned b) The knowledge part being the result from the final exam The final grading scheme: 50.0 - 59.9%:= (3.0) 60.0 - 69.9%:= (3.5) 70.0 - 79.9%:= (4.0) 80.0 - 89.0%:= (4.5) 90.0 – 100%:= (5.0)

Additional info

To be allowed to take the final exam student should fulfill the attendance criterion, meaning he/she should attend and

actively participate in all of scheduled meetings (or make up for absence after the acceptance of the teacher responsible for the meeting). Student should also achieve >50% in the skills part. If the aforementioned criteria are not fulfilled student is not allowed to take the final exam and consequently the term is lost.
Student is obligated to come on time for course meetings. 2 lateness are allowed without punishment, otherwise student is committed to make up for one of the topic she/he has been late, the topic is drawn by the teacher.

Entry requirements

Attendance on the course in obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Obstetrics and Gynecology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23, 2023/24, 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, C. Preclinical course, F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** seminar: 20, classes: 20	3.0

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** seminar: 20, classes: 20	3.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** seminar: 45, classes: 35	4.0

Periods Semester 11, Semester 12	**Examination** examination **Activities and hours** clinical classes: 60	**Number of ECTS points** 4.0

Goals

C1	To provide the basic resource of information in gynecology and obstetrics
C2	To introduct the basic techniques in the field of obstetrics and gynecology
C3	To obtain the theoretical knowledge on physiology and pathology of the pregnancy and the delivery
C4	To obtain ability in early diagnosis of cancer and the risk of cancer in the reproductive organ diseases and their prevention rules
C5	To gain basic training in management of obstetrical emergencies.
C6	To obtain practical ability of obstetrical examination of women during pregnancy, labor and puerperium.
C7	To develop students' ability to talk with the patient and her family regarding the present or suspected pathology and be able to recognize diagnostic and therapeutic criteria
C8	To gain basic knowledge in the field of ginecologic and obstetric endocrinology

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	booklet of practice, test, credit
W2	symptoms and course of diseases	O.W2	booklet of practice, test, credit
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice, test, credit
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	booklet of practice, test, credit
W5	female reproductive functions, related disorders and diagnostic and therapeutic procedures concerning in particular: 1) the menstrual cycle and its disturbances, 2) pregnancy, 3) physiological and pathological childbirth and postpartum period, 4) genital cancers and inflammations, 5) birth control, 6) menopause, 7) basic diagnostic methods and gynecological procedures	F.W9	booklet of practice, test, credit
W6	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	booklet of practice, test, credit
W7	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	booklet of practice, test, credit

W8	postoperative treatment with analgesic therapy and postoperative monitoring	F.W5	booklet of practice, test, credit
W9	the course and regulation of reproductive functions in women and men	B.W22	booklet of practice, test, credit
W10	aberrations of autosomes and heterosomes that cause disease, including oncogenesis and cancer	C.W7	booklet of practice, test, credit
W11	basics of diagnostics of gene and chromosomal mutations responsible for hereditary and acquired diseases, including neoplastic diseases	C.W9	booklet of practice, test, credit
W12	normal human karyotype and different types of sex determination	C.W3	booklet of practice, test, credit
W13	genetic determinants of human blood groups and serological conflict in the Rh system	C.W6	booklet of practice, test, credit
Skills – Student can:			
U1	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practice, classroom observation, test, credit
U2	identify medical problems and prioritize medical management	O.U1	booklet of practice, classroom observation, credit
U3	plan the diagnostic procedure and interpret its results	O.U3	booklet of practice, classroom observation, credit
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	booklet of practice, classroom observation
U5	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practice, classroom observation
U6	adhere to the principles of asepsis and antisepsis	F.U3	booklet of practice, classroom observation
U7	recognize subjective and physical symptoms indicating the abnormal course of pregnancy (abnormal bleeding, contractions of the uterus)	F.U13	booklet of practice, classroom observation, test
U8	interpret the results of physical examination of a pregnant woman (arterial pressure, functioning of the mother's and fetus' heart) and the results of laboratory tests proving the pathologies of pregnancy	F.U14	booklet of practice, classroom observation
U9	interpret the cardiotocography (CTG)	F.U15	booklet of practice, classroom observation, test, credit
U10	recognize the beginning of labor and its incorrect duration	F.U16	booklet of practice, classroom observation, credit
U11	interpret subjective signs and symptoms during the time of confinement	F.U17	booklet of practice, classroom observation
U12	establish recommendations, indications and contraindications concerning the use of contraceptive methods	F.U18	booklet of practice, classroom observation

U13	identify indications for prenatal testing	C.U2	booklet of practice, classroom observation, test, credit
U14	make decisions about the need for cytogenetic and molecular tests	C.U3	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
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	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
K11	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation

Calculation of ECTS points

Semester 5, Semester 6

Activity form	**Activity hours***
seminar	20
classes	20

Student workload	**Hours** 40
Workload involving teacher	**Hours** 40
Practical workload	**Hours** 20

* hour means 45 minutes

Semester 7, Semester 8

Activity form	Activity hours*
seminar	20
classes	20
Student workload	**Hours** 40
Workload involving teacher	**Hours** 40
Practical workload	**Hours** 20

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*
seminar	45
classes	35
Student workload	**Hours** 80
Workload involving teacher	**Hours** 80
Practical workload	**Hours** 35

* hour means 45 minutes

Semester 11, Semester 12

Activity form	Activity hours*
clinical classes	60
preparation for examination	200
Student workload	**Hours** 260
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Anatomy and physiology of the female reproductive system	W1	seminar
2.	Physiological changes during pregnancy. Puerperium.	W1, W10, W2, W5, U11, U13, U14, U6, K1, K2, K6, K7	seminar
3.	Prenatal genetic screening. Fetal theraphy. Premature birth.	W1, W2, W3, W5, W6, W7, W8, U10, U13, U2, U3, U5, U9, K1, K3, K8	seminar
4.	Fetal well-being assesment.	W11, W12, W13, W2, W5, W6, W7, W8, U1, U12, U13, U2, U3, U4, U5, U9, K11, K3, K4, K5, K6, K7	classes, seminar
5.	Normal labour and delivery. Operative delivery. Shoulder dystocia.	W10, W11, W2, W3, W4, W5, W6, W7, U14, U5, K5	seminar
6.	Placental abnormalities. Obstetric hemorrhage.	W1, W13, W3, W4, U1, U10, U11, U12, U6, U7, U9, K10, K3, K7, K8	classes, seminar, clinical classes
7.	Introduction to gynecological oncology. Oncological prevention in gynecology.	W2, W3, W4, W5, W6, W7, U2, U5, K10, K2, K3, K4, K5, K7, K8, K9	classes, seminar, clinical classes
8.	Hypertension disease during pregnancy.	W2, W3, W4, W9, U10, U11, U3, U4, U5, U6, U7, U8, U9, K11, K9	classes, clinical classes
9.	Intrauterine fetal growth disorders. Rhesus isoimmunisation. Infectious diseases in pregnancy.	W1, W13, W2, W3, W5, U1, U2, U3, U4, U7	seminar
10.	The most common haematological, and gastrointestinal disorders in pregnant women.	W1, W2, W3, W5, U1, U2, U3	seminar
11.	Ultrasound screening in obstetrics and gynecology.	W2, U2, U3, U8, K8	clinical classes
12.	Endometriosis. Endometrial neoplasms.	W1, W2, W3, W6, W9, K2, K3	seminar, clinical classes
13.	Menstrual cycle. Regulation. Methods of contraception. Menopause.	W1, W2, W3, W9, U2, U3	seminar
14.	Thyroid disease and diabetes mellitus in pregnancy.	W1, W3, U1, U2, U3, U4, K6	seminar
15.	Epidemiology and prevention of cancers of the female genital tract.	W1, W10, W11, W2, W3, W5, W9, U2, U3	seminar
16.	Implantation, embryogenesis, placental development. Fetal malpresentation. Pelvimetry.	W1, W2, W4, W5, W6, W7, W9, U11, U2	seminar
17.	Obstetrical and gynecological examination.	W1, W12, W2, W3, W6, W9, U10, U11, U14, K3	classes, seminar
18.	Phases of parturition. Physiological and biochemical processes regulating parturition. Physiologic delivery.	W1, W2, W3, W4, W5, U10, U11, U5, U6, U9, K2, K3, K6, K7	seminar

19.	Intraepithelial diseases of the cervix, vagina and vulva. Role of colposcopy and HPV infections.	W1, W10, W11, W2, W3, W4, W6, U5, K3, K7	seminar
20.	Breast cancer. Benign breast diseases.	W1, W10, W11, W2, W4, U5	seminar
21.	Intrauterine growth retardation. Intrauterine fetal demise. Infectious diseases during pregnancy.	W1, W12, W2, W3, W4, U13, U14, U2, U3, U9, K8	seminar
22.	Gynecological oncology: benign and malignant tumors of the ovary, management. Cancer and pregnancy.	W1, W10, W11, W2, W3, W6, U5, K2, K7, K8	seminar
23.	Thromboembolic diseases during pregnancy.	W2, W3, W9, U1, U2, U3	seminar
24.	Female and male infertility. Excessive androgen disorders.	W12, W2, U1, U2, U3, U4, K1	seminar
25.	Hemolytic disease of the fetus. Non-immune hydrops. Post-term pregnancy. Amniotic fluid abnormalities.	W1, W3, W5, U10, U13, U2, U4, U8	seminar
26.	Ectopic pregnancy. Gestational throphoblastic disease. Endometriosis. Pelvic pain syndrome.	W1, W2, W3, W4, W9, U2, U3, U7, K6, K7	seminar
27.	Amennorhea. Menstrual disorders. Abnormal uterine bleeding.	W1, W7, W9, U1, U12, U2, U3	seminar
28.	Diabetes in pregnancy.	W1, W2, W3, W4, U11, U13, U2, K6	seminar
29.	Diseases of the liver, biliary system and pancreas in pregnancy. Pregnancy and autoimmunologic diseases.	W1, W2, W3, U1, U3, K3, K7	seminar

Course advanced

Semester 5, Semester 6

Teaching methods:

classes / practicals, clinical classes, seminar, lecture, Ćwiczenia fantomowe

Activities	Examination methods	Credit conditions
seminar	credit	Student's attendence at the seminars is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.
classes	classroom observation, credit	Student's attendence at the classes is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.

Semester 7, Semester 8

Teaching methods:

classes / practicals, clinical classes, seminar, Ćwiczenia fantomowe

Activities	Examination methods	Credit conditions
seminar	credit	Student's attendence at the seminars is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.

Activities	Examination methods	Credit conditions
classes	credit	Student's attendence at the classes is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.

Semester 9, Semester 10

Teaching methods:

clinical classes, seminar, Ćwiczenia fantomowe

Activities	Examination methods	Credit conditions
seminar	credit	Student's attendence at the seminars is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.
classes	booklet of practice, classroom observation	Student's attendence at the classes is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.

Semester 11, Semester 12

Teaching methods:

clinical classes, Ćwiczenia fantomowe

Activities	Examination methods	Credit conditions
clinical classes	classroom observation, test	Student's attendence at the classes is obligatory. 2hrs of absence are allowed. In case of more absences oral exam is required to obtain the credit.

Additional info

Entry requirements

Students have knowledge of the pre-clinical subjects: anatomy, physiology and pathophysiology of the female reproductive organ,
Student is able to collect general medical history and interpret labolatory findings,
Student has knowledge of aseptic principles procedure In the following semesters,
Moreover: have to pass the previous module in gynecology and obstetrics

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Pediatrics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23, 2023/24, 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** C. Preclinical course, E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** seminar: 68, classes: 66	7.0

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** seminar: 26, classes: 32	4.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** classes: 35, seminar: 39, simulations: 18	6.0

Periods Semester 11, Semester 12	**Examination** examination **Activities and hours** clinical classes: 114, simulations: 6	**Number of ECTS points** 8.0

Goals

C1	To familiarize students with the basic information on developmental medicine
C2	Teaching basic practical skills, including collecting pediatric history and full physical examination of the child
C3	Explaining major issues in the fields of infectious diseases, pulmonology, allergology and children's gastroenterology
C4	Explaining major issues in the fields of cardiovascular, urinary tract, neonatal, connective tissue and environmental diseases
C5	Explaining major issues in the fields of pediatric oncology and hematology, endocrinology and neurology
C6	Teaching practical skills in pediatrics
C7	Preparation for independent work in the field of pediatrics

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	environmental and epidemiological determinants of the most frequent diseases	E.W1	multiple choice test
W2	the principles of nutrition of healthy and sick children, including breastfeeding, preventive vaccination and child health monitoring	E.W2	multiple choice test
W3	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	multiple choice test
W4	the most common life-threatening conditions in children and the rules of conduct in these conditions	E.W6	multiple choice test

W5	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	E.W3	multiple choice test
W6	development, structure and functions of the human body in normal and pathological conditions	O.W1	multiple choice test
W7	symptoms and course of diseases	O.W2	multiple choice test
W8	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	multiple choice test
W9	basic mechanisms of cell and tissue damage	C.W27	multiple choice test
W10	issues related to detailed pathology of organs, macro- and microscopic images and clinical course of pathomorphological changes in particular organs	C.W31	multiple choice test
W11	clinical forms of the most frequent diseases of particular systems and organs, metabolic diseases and disorders of water-electrolyte, hormonal and acid-base metabolism	C.W34	multiple choice test
W12	micro-organisms, including pathogenic and present in the physiological flora	C.W12	multiple choice test
W13	symptoms of iatrogenic infections, their pathways and pathogens causing changes in individual organs	C.W18	multiple choice test
W14	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management	C.W19	multiple choice test
W15	basic principles of disinfection, sterilization and aseptic management	C.W20	multiple choice test
W16	genetic determinants of human blood groups and serological conflict in the Rh system	C.W6	multiple choice test
Skills – Student can:			

U1	carry out a medical interview with the child and his or her family	E.U2	booklet of professional skills, practical examination
U2	carry out a physical examination of a child of all ages	E.U4	booklet of professional skills, practical examination
U3	conduct routine health checks	E.U11	booklet of professional skills
U4	assess the degree of advancement of puberty	E.U10	practical examination
U5	compile anthropometric and blood pressure measurements with data on centile grids	E.U9	booklet of professional skills, practical examination
U6	perform differential diagnosis of the most common diseases of adults and children	E.U12	practical examination, multiple choice test
U7	plan diagnostic, therapeutic and prophylactic procedures	E.U16	practical examination, multiple choice test
U8	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	booklet of professional skills, practical examination
U9	apply nutritional treatment, including enteral and parenteral nutrition	E.U25	practical examination, multiple choice test
U10	qualify the patient for vaccination	E.U27	booklet of professional skills
U11	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	booklet of professional skills, practical examination
U12	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	booklet of professional skills
U13	plan specialist consultations	E.U32	practical examination, multiple choice test
U14	maintain patient's medical records	E.U38	booklet of professional skills

U15	assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy	E.U39	booklet of professional skills
U16	select appropriate physical activity in the developmental period of children and adolescents and propose health training in adulthood, both in health and disease	E.U40	booklet of professional skills
U17	assess the condition of the newborn on the Apgar scale and its maturity, and examine neonatal reflexes	E.U8	booklet of professional skills
U18	identify medical problems and prioritize medical management	O.U1	booklet of professional skills, practical examination
U19	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of professional skills
U20	plan the diagnostic procedure and interpret its results	O.U3	booklet of professional skills, practical examination
U21	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	booklet of professional skills, practical examination
U22	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U23	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U24	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
U25	interpret the results of microbiological tests	C.U10	booklet of professional skills, multiple choice test
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	promote health-promoting behaviors	O.K6	classroom observation
K6	use objective sources of information	O.K7	classroom observation
K7	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Semester 5, Semester 6

Activity form	Activity hours*
seminar	68
classes	66
preparation for classes	50
preparation for test	20

Student workload	**Hours** 204
Workload involving teacher	**Hours** 134
Practical workload	**Hours** 66

* hour means 45 minutes

Semester 7, Semester 8

Activity form	Activity hours*
seminar	26
classes	32
preparation for classes	50

Student workload	**Hours** 108
Workload involving teacher	**Hours** 58
Practical workload	**Hours** 32

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*
classes	35
seminar	39
simulations	18
preparation for classes	50
preparation for test	20

Student workload	**Hours** 162
Workload involving teacher	**Hours** 92
Practical workload	**Hours** 53

* hour means 45 minutes

Semester 11, Semester 12

Activity form	**Activity hours***
clinical classes	114
simulations	6
preparation for classes	50
preparation for test	30

Student workload	**Hours** 200
Workload involving teacher	**Hours** 120
Practical workload	**Hours** 120

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities

1.	III year Seminars/case presentations: 1. Physical development. Assessment of growth 2. Fever 3. Fetal and neonatal circulation. Transition period. 4. Infectious diseases in neonates 5. Differential diagnosis of proteinuria, erythrocyturiaand pyuria 6. Congenital defects of kidney and urinary tract 7. Congenital heart defects. History and physicalexamination. Major and minor clinical signs 8. Vomiting, diarrhoea, dehydration 9. Lymphadenopathy, hepatoand splenomegaly 10. Anemias in children, bleeding disorders 11. Normal and abnormal growth 12. Normal and abnormal puberty 13. Assessment of motor, cognitive and speachdevelopment 14. Food allergy. Anaphylactic shock. 15. Diagnostic and therapeutic management of childrenwith acute and chronic respiratory disorders 16. Respiratory failure – definition, causes, diagnostics,treatment 17. Allergic diseases: asthma, allergic rhinitis, atopicdermatitis, (definition, diagnostic and therapeuticapproach). 18. Genetic lung diseases: Cystic fibrosis (definition,genetics, symptomatology, diagnosis, treatment andscreening). Primary cilliary diskinesia 19. The diagnosis of definitive or probable tuberculosis inchildren. A child who had a contact with adult withtuberculosis disease. 20. Pneumonia - classification, clinical course, imagingtechniquies - USG, CT 21. Jaundice 22. Nutrition of a healthy child and with gastrointestinaldiseases 23. Development of GI tract and congentalgastrointestinal anomalies 24. Chronic diarrhoea 25. Chronic abdominal pain. Functional disorders of GItract 26. Asterial hypertenssion 27. Acute renal injury 28. Chronic renal failure 29. Glomeluropathies- primary and secondary. Nephroticsyndrome 30. Renal failure treatment - peritoneal dialysis, renaltransplant 31. Nocturnal enuresis 32. Stones in urinary tract. Nephrocalcinosis 33. Pathology 34. Pathology	W1, W2, W5, W6, U1, U10, U2, U3, U4, U5, U6, K3, K5	seminar

2.	III year Practical exercises 1. Hospitalized child. The rules of patient and parentsrespect. Patient’s records. 2. Taking history in pediatrics 3. Assessment of general condition. 4. Assessment of growth and nutrition 5. Evaluation of healthy newborn 6. Evaluation of the patients in ICU 7. Skin, subcutaneous tissue, lymph nodes. 8. The chest: inspection, percussion, auscultation.Blood pressure measurement 9. The most common symptoms of respiratory tractdisorders:cough,dysponse, stridor, cyanosis, physiologicaland pathological ausculatory findings 10. The abdomen-inspection, bowles sounds,percussionand palpation. External genitalia examination 11. The most common symptoms of GI tractdisorders:pain, vomiting, diarrhea, constipations,hepatosplenomegaly 12. The muscular strenghtand tone. Deep tendonreflexes. Meningeal signs in different age. 13. Oral cavity, nose and pharynx. Symptoms of oralcavity disorders. The neck examination. 14. Examination of extremities and joints. Active andpassive range of movements. Hips examination. 15. Acute and chronic upper respiratory tract infections.Laryngitis and epiglottitis. 16. Bronchiolitis – management and prevention. 17. Asthma, chronic bronchitis, post nasal drip syndrome.The techniques of inhalations and nebulization. 18. Community acquired pneumonia. Complications –empyema, abscess. Nosocomial pneumonia – prevention. 19. Artificial ventilation. Chronic assisted ventilation.Tracheostomy. Blood gases analysis. 20. Chronic cough – diagnostic and therapeuticmanagement. Pulmonary function tests: spirometry,challenge tests, PEF. Recommendation for flexiblebronchoscopy 21. Urticaria/angioedema. Allergy testing: Skin pricktests, intradermal tests, patch tests, blood tests –recommendation and interpretation. 22. Gastroesophageal reflux disease. Infant regurgitation.Stomach ulces and H. pylori infection. 23. Inflammatory bowel diseases. 24. Additional tests in pediatric gastroenterology(hydrogen breath test, manometry). Endoscopicexaminations 25. Acute infections of GI tract. 26. Urgent conditions in pediatric gastroenterology. 27. Approach to neonatal and childhood jandice. 28. Nephrotic syndrome 29. Urinary tract infections 30. Arterial hypertension 31. Acute kidney injury. Dialysis techniques 32. Urinary tract malformations (Urology) 33. Chronic kidney diseases	W10, W11, W5, W7, W8, W9, U11, U12, U18, U2	classes

3.	IV year Seminars/case presentations 1. Infectious diseases in neonates 2. Cyanotic and non cyanotic cardiac defects 3. Cardiomyopathies 4. Ductus depended cardiac defects in neonates 5. Shock in neonates 6. Congestive heart failure in infants-diagnostics andtreatment. 7. Congenital heart defects with functionally singleventricle. 8. JRA/ Lupus erythromatosus 9. Congenital anomalies of urinary tract in children 10. Prematurity 11. Perinatal asphyxia/birth trauma 12. Randomized clinical trials in pediatrics 13. Decission making in pediatrics Practical exercises 1. Additional tests in cardiologic diagnostics. 2. Major and minor signs of congenital heart defects. 3. Hemodynamic consequences of congenital heartdefects. Interventions in pediatric cardiology. 4. Echocardiography in heart structure and functionassessment. 5. Congenital heart defects 6. Pediatric rheumathology - JRA/SLE 7. Vasculitis. Kawasaki disease. Henoch-Schonleinpurpura 8. Fetal and neonatal circulation. Transition period. 9. Prematurity. 10. Perinatal trauma. 11. Hemolytic disease of the newborn. 12. Respiratory failure in neonates. 13. Infections in neonatal period. 14. Newborn small for the gestational age. 15. Child with chronic disorder in pediatric department. 16. Congenital errors of metabolism	W16, W5, W7, W8, U11, U12, U17, U18, U19, U2, U9	classes, seminar

4.	V year Seminars/case presentations 1. Pediatric diabetology 2. Disorders of puberty. Disorders of sexualdevelopment 3. Emergencies in diabetology 4. Disorders of parathyroid. Fluid and electrolytedisorders 5. Signs and symptoms in the most common severendocrine dieases 6. Solid tumors in pediatrics 7. Hemostatic disorders. 8. Anemia. 9. Emergencies in hematology and oncology 10. Oncology – case presentation 11. Solid tumors in neonates 12. Epileptic and non epileptic spells in children 13. Neurodegenerative disorders 14. Headache and migraine 15. Mental and developmental deficits. Cerebral palsy 16. Neuroimaging and electrophysiological techniques ofCSN 17. Pathology 18. Pathology Practical exercises 11 x 3 hours 1. Growth disorders 2. Puberty disorders 3. Thyroid disorders 4. Diabetes melitus 5. Leukemias in pediatrics 6. Lymphomas in children 7. Neuroblastoma 8. Sarcomas of soft tissue, bone tumors, tumors of liverand kidneys. 9. Epilepsy – differential diagnosis. Clinical approach.Treatment. 10. Neuromuscular disorders in children. Acute flaccidparesis 11. Emergencies in neurology	W10, W11, W3, W5, W7, W8, W9, U11, U12, U15, U18, U2	classes, seminar
5.	Microbiology in pediatrics	W12, W13, W14, W15, U25	classes, seminar

6.	Medical simulations: Acute stridor Asthma exacerbation Shock in neoante Dehydration in neonate. Febrile seizures. Coarctation of the aorta. Supraventricular tachycardia Neonatal fever. Sepsis Non-traumatic coma. Diabetic coma. Nephrotic syndrome. Chronic kidney diseases Lymphodenopathy	U18, U19, U20, U21	simulations
7.	VI Practical occupational learning - 120 hours (114 clinicalclasses, 6 simulations) Students are assigned to one hospital ward for 4 weeks.Student's duties are: participation in preparation beforechildren's examination, participation in keeping therecords - recording the findings in patient's statuspraesens, recording tests' results in hospital records,participation in examination, participation in consulting atinfirmary and different hospital wards and carrying out medical procedures according to the list and principleswritten in the book called "The List of Medicine Graduate'sSkills"	W4, W8, U11, U12, U13, U14, U15, U16, U18, U19, U20, U21, U22, U23, U24, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	clinical classes, simulations

Course advanced

Semester 5, Semester 6

Teaching methods:

clinical classes, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation, multiple choice test	active participation in classes, 100% attendance,multiple choice test (40 items), passing score 60%
classes	classroom observation, multiple choice test	active participation in classes, 100% attendance,multiple choice test (40 items), passing score 60%

Semester 7, Semester 8

Teaching methods:

clinical classes, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation	active participation in classes , 100% attendance
classes	booklet of professional skills, classroom observation	active participation in classes , 100% attendance

Semester 9, Semester 10

Teaching methods:

clinical classes, seminar, simulation

Activities	Examination methods	Credit conditions
classes	booklet of professional skills, classroom observation, multiple choice test	active participation in classes, 100% attendance, multiple choice test(40 items, the examination material scope from IV-V year), passing score 60%
seminar	classroom observation, multiple choice test	active participation in classes, 100% attendance, multiple choice test(40 items, the examination material scope from IV-V year), passing score 60%
simulations	classroom observation, multiple choice test	active participation in classes, 100% attendance, multiple choice test(40 items, the examination material scope from IV-V year), passing score 60%

Semester 11, Semester 12

Teaching methods:

clinical classes, simulation

Activities	Examination methods	Credit conditions
clinical classes	booklet of professional skills, practical examination, classroom observation, multiple choice test	active participation in classes, 100% attendance, multiple choice test (60 items, the examination material scope from III year - VI year)
simulations	booklet of professional skills, classroom observation	100 % attendance

Additional info

Entry requirements

Completion of subjects: Clinical biochemistry with elements of chemistry, Pathology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Psychiatry

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23, 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	credit **Activities and hours** seminar: 20	1.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** e-learning: 20, classes: 55	5.0

Periods	**Examination**	**Number of ECTS points**
Semester 11, Semester 12	examination **Activities and hours** clinical classes: 60	4.0

Goals

C1	Introduction to the specifics of psychiatry. To familiarize students with the differences between the problems of the mentally ill and those they have encountered in somatic medicine so far.
C2	Acquiring knowledge and practical skills in the diagnosis and therapy of mental disorders.
C3	Developing practical skills in the diagnosis and therapy of mental disorders
C4	Preparing the student to work independently with a patient with mental disorders
C5	Integrating the acquired knowledge and skills in the field of mental disorders with previously acquired skills and knowledge in other medical specialties

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	classroom observation, oral credit
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, oral credit
W3	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	classroom observation, oral credit
W4	methods of conducting scientific research	O.W5	classroom observation, oral credit
W5	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	classroom observation, oral credit
W6	basic concepts of the pathogenesis of mental disorders	E.W15	classroom observation, oral credit
W7	the general symptomatology of mental disorders and the rules for classifying them according to the main classification systems	E.W16	classroom observation, oral credit
W8	symptoms, principles of diagnosis and therapeutic management in the most frequent mental disorders, including 1) schizophrenia, 2) affective disorders, 3) neurotic and adaptive disorders, 4) nutritional disorders, 5) disturbances related to the intake of psychoactive substances, 6) sleep disorders	E.W17	classroom observation, oral credit
W9	principles of diagnostics and emergency management in psychiatry, including suicide issues	E.W18	classroom observation, oral credit
W10	the specificity of mental disorders and their treatment in children, adolescents and in old age	E.W19	classroom observation, oral credit
W11	symptoms of mental disorders in the course of somatic diseases, their influence on the course of the basic disease and prognosis and the principles of their treatment	E.W20	classroom observation, oral credit
W12	the problem of human sexuality and fundamental disorders associated with it	E.W21	classroom observation, oral credit

W13	rules on the protection of mental health, with particular reference to the rules on admission to a mental hospital	E.W22	classroom observation, oral credit
W14	environmental and epidemiological determinants of the most frequent diseases	E.W1	classroom observation, oral credit
W15	basic psychotherapeutic techniques and principles for combining psychotherapy and pharmacotherapy	E.W58	classroom observation, oral credit
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	classroom observation, oral credit
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation, oral credit
U3	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, oral credit
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, oral credit
U5	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, oral credit
U6	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, oral credit
U7	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, oral credit
U8	carry out a medical history with an adult patient	E.U1	classroom observation, oral credit
U9	carry out a medical interview with the child and his or her family	E.U2	classroom observation, oral credit
U10	conduct a psychiatric examination	E.U5	classroom observation, oral credit
U11	recognize immediate life-threatening conditions	E.U14	classroom observation, oral credit
U12	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, oral credit
U13	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	classroom observation, oral credit
U14	recognize the symptoms of drug dependence and propose treatment	E.U19	classroom observation, oral credit
U15	qualify the patient for home and hospital treatment	E.U20	classroom observation, oral credit
U16	maintain patient's medical records	E.U38	classroom observation, oral credit
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, oral credit
K2	to be guided by the well-being of a patient	O.K2	classroom observation, oral credit

K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, oral credit
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, oral credit
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation, oral credit
K6	promote health-promoting behaviors	O.K6	classroom observation, oral credit
K7	use objective sources of information	O.K7	classroom observation, oral credit
K8	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, oral credit
K9	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation, oral credit

Calculation of ECTS points

Semester 5, Semester 6

Activity form	**Activity hours***
seminar	20

Student workload	**Hours** 20
Workload involving teacher	**Hours** 20

* hour means 45 minutes

Semester 9, Semester 10

Activity form	**Activity hours***
e-learning	20
classes	55
preparation for classes	15
professional practice	70
preparation for colloquium	10
preparation for classes	48
consultations with lecturer	2

Student workload	**Hours** 220
Workload involving teacher	**Hours** 75
Practical workload	**Hours** 125

* hour means 45 minutes

Semester 11, Semester 12

Activity form	**Activity hours***
clinical classes	60

Student workload	**Hours** 60
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	General psychopathology	W1, W6, W7, U2, U7, K7	classes, seminar, e-learning, clinical classes
2.	Social context of psychiatry	W14, W3, U15, U5, U7, K1, K2	seminar, e-learning
3.	The development context of psychiatry	W10, W14, W5, U7, U9, K2, K4	seminar, e-learning
4.	Brain and mind	W4, W6, U7, K5, K7	seminar
5.	Psychiatric examination	W1, W2, W8, U10, U2, U5, U8, K1	classes, seminar, clinical classes
6.	Legal aspects of psychiatry	W13, W3, W9, U11, U16, U2, U4, K2, K3, K5, K7, K8, K9	classes, seminar, e-learning
7.	Depressive disorders in medical practice	W1, W14, W15, W2, W4, W6, W8, W9, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K6, K7, K8, K9	classes, seminar, clinical classes

8.	Mental disorders in children and adolescents	W1, W10, W13, W14, W15, W2, W3, W4, W5, W6, W8, W9, U1, U10, U11, U12, U13, U15, U16, U2, U3, U4, U5, U6, U7, U9, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, e-learning, clinical classes
9.	Elderly mental disorders	W1, W10, W11, W12, W13, W14, W2, W3, W6, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, e-learning, clinical classes
10.	Psychosomatic disorders	W1, W11, W15, W4, W6, U1, U3, U4, U7, K1, K2	seminar, e-learning
11.	Schizophrenia and other psychoses	W1, W10, W11, W13, W14, W15, W2, W3, W4, W6, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, e-learning, clinical classes
12.	Addiction	W1, W10, W11, W13, W14, W15, W2, W3, W6, W8, W9, U1, U10, U12, U13, U14, U15, U16, U4, U6, U8, K1, K2, K3, K4, K5, K6, K8, K9	classes, seminar, e-learning
13.	Sexsual disorders	W1, W12, W14, W15, W2, W3, W4, W6, U1, U12, U3, U7, K1, K2, K4, K5	seminar, e-learning
14.	Systemic conditions of mental disorders	W10, W14, W15, W2, U3, U6, K1, K2, K4, K6, K8	seminar, e-learning
15.	Personality disorders	W1, W14, W15, W2, W6, U1, U12, U3, U4, U5, U6, K1, K2, K3, K4, K5, K6, K8, K9	classes, seminar
16.	Issues of the norm and pathology of mental life	W1, W6, W7, U5, U7, K2, K5, K7, K9	classes, clinical classes
17.	Biological basis of mental disorders	W14, W6, U7	classes, e-learning
18.	Organic mental disorders	W1, W10, W11, W14, W2, W6, W9, U1, U10, U11, U12, U13, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K4, K6, K7, K8, K9	classes, clinical classes
19.	Mood disorders	W1, W10, W11, W13, W14, W15, W2, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K6, K7, K9	classes, e-learning, clinical classes

20.	Neurotic, stress-related and somatoform disorders	W1, W11, W13, W14, W15, W2, W3, W4, W6, W7, W8, W9, U1, U10, U12, U13, U14, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar, clinical classes
21.	Behavioral syndromes associated with physiological disorders and physical factors	W1, W11, W13, W14, W15, W2, W3, W4, W6, W7, W8, W9, U1, U10, U12, U13, U14, U16, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K6, K7, K8, K9	classes, clinical classes
22.	Psychopharmacotherapy issues	W15, W4, W9, U1, U12, U13, U14, U4, U7, K2, K7, K9	classes, e-learning

Course advanced

Semester 5, Semester 6

Teaching methods:

case study, classes / practicals, clinical classes, demonstration, educational film, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation	obligatory participation, activity

Semester 9, Semester 10

Teaching methods:

case study, classes / practicals, clinical classes, discussion, educational film, case study method

Activities	Examination methods	Credit conditions
e-learning	classroom observation	obligatory participation, activity
classes	classroom observation	obligatory participation, activity

Semester 11, Semester 12

Teaching methods:

case study, clinical classes, discussion

Activities	Examination methods	Credit conditions
clinical classes	oral credit	obligatory participation, activity

Entry requirements

General gnowledge gained during previous years of studies

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Radiology and Basis of Ultrasonography

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	examination **Activities and hours** e-learning: 8, seminar: 57, classes: 11	4.0

Goals

C1	to familiarize a student with diagnostic imaging methods and diagnostic possibilities in imaging and differentiating diseases of organs and systems of the human body
C2	practical learning of ultrasound examination. Learning images of body structures in ultrasound. presentation of ultrasound images in basic, selected pathological changes

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written examination, practical colloquiums

W2	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	written examination, practical colloquiums
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	written examination, practical colloquiums
U2	evaluate the result of a radiological examination in the most common types of fractures, particularly long bone fractures	F.U7	written examination, practical colloquiums
U3	can perform and interpret FAST ultrasound (Focused Assessment with Sonography for Trauma)	F.U30	written examination, practical colloquiums
Social competences – Student is ready to:			
K1	respect medical confidentiality and patients' rights	O.K3	written examination, practical colloquiums
K2	to be guided by the well-being of a patient	O.K2	written examination, practical colloquiums

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	8
seminar	57
classes	11
preparation for classes	22
preparation for examination	22
Student workload	**Hours** 120
Workload involving teacher	**Hours** 76
Practical workload	**Hours** 11

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Fundamentals of physics of diagnostic imaging methods. Radiological protection	W2	seminar, e-learning

2.	Rules for referring to radiological examinations, preparation for examinations, contrast agents.	W1, U1, K2	seminar
3.	Overview pictures and x-rays. Interpretation of test results.	W1, U1	seminar
4.	Basics of ultrasound and CT scan	W1, U3, K1	seminar
5.	Angiography and interventional radiology.	W2, U1	seminar
6.	Chest - lungs, mediastinum, heart and large vessels	W1, W2, U1, K2	classes
7.	Digestive tract	W1, W2, U1, K2	classes
8.	Genitourinary system	W1, W2, U1, K2	classes
9.	The osteoarticular system	W1, W2, U1, U2, K2	classes
10.	Diagnosis of breast diseases	W1, W2, U1, K1	classes
11.	Vascular system and interventional radiology	W1, W2, U1	classes
12.	Neuroradiology	W1, W2, U1, U2, K2	classes
13.	Diagnosis of craniofacial diseases	W1, W2, U1, K1	classes
14.	The structure of the ultrasound scanner. Ultrasound software and functions. Directions of ultrasound development. Ultrasound anatomy of anatomical regions. Methodology of ultrasound examination of individual anatomical regions. Basic pathological changes in ultrasound images.	W1, U3	e-learning
15.	Practical learning of ultrasound examination (abdominal cavity, pelvis, neck, FAST)	U3	classes

Course advanced

Teaching methods:

classes / practicals, clinical classes, computer classes, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	written examination	Students are required to prepare for classes and seminars and actively participate in them. Completion of classes is based on attendance at seminars and practical classes.
seminar	written examination	Students are required to prepare for classes and seminars and actively participate in them. Completion of classes is based on attendance at seminars and practical classes.
classes	written examination, practical colloquiums	Students are required to prepare for classes and seminars and actively participate in them. Completion of classes is based on attendance at seminars and practical classes.

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Potable water and health

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Students are acquainted with the most important physical, chemical and bacteriological hazards which can provide drinking water in therapeutic and rehabilitation pools for the needs of artificial kidneys, for dental and pharmaceutical purposes. Impact assessment of macroelements and microelements present in drinking water for health. Familiarizing students with the importance of water and its components for proper nutrition in various disease entities. Learning new methods of water purification and disinfection in Krakow water treatment plants.

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	written examination

W2	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	written examination
W3	epidemiology of viral and bacterial infections and infections with fungi and parasites, taking into account their geographical distribution	C.W13	written examination
W4	basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management	C.W19	written examination
W5	basic principles of disinfection, sterilization and aseptic management	C.W20	written examination
W6	micro-organisms, including pathogenic and present in the physiological flora	C.W12	written examination
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	written examination
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	written examination
U3	communicate and share knowledge with colleagues in a team	O.U8	written examination
U4	critically evaluate the results of scientific research and adequately justify the position	O.U9	written examination
U5	assess environmental hazards and use basic methods to detect the presence of harmful (biological and chemical) factors in the biosphere	C.U6	written examination
U6	prepare preparations and identify pathogens under the microscope	C.U9	written examination
U7	interpret the results of microbiological tests	C.U10	written examination
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	written examination
K2	to be guided by the well-being of a patient	O.K2	written examination
K3	promote health-promoting behaviors	O.K6	written examination
K4	use objective sources of information	O.K7	written examination
K5	formulate conclusions from own measurements or observations	O.K8	written examination
K6	formulate opinions on the various aspects of the professional activity	O.K10	written examination

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
preparation for classes	10

preparation for examination	20
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Familiarizing students with the most important physical, chemical and bacteriological threats which can provide drinking water in therapeutic pools and rehabilitation, for the needs of artificial kidneys, for dental and pharmaceutical purposes.	W5, U1, U4, U7, K5	seminar
2.	Impact assessment of macroelements and microelements occurring in drinking water for health.	W1, W3, U3, U5, K4	seminar
3.	Familiarizing students with the importance of water and its ingredients for proper nutrition in a variety of disease entities.	W4, U2, U6, K2, K6	seminar
4.	Learning new methods of water purification and disinfection in Krakow water treatment plants.	W6, U6, K3, K4	seminar
5.	Interpretation of toxicological test results by biological tests.	W2, W3, U5, U6, K1, K5	seminar

Course advanced

Teaching methods:

brainstorm, classes / practicals, discussion, group work, trip, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	written examination	

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Biostatistics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Teaching statistical inference
C2	Using medical databases
C3	Operations using statistical software
C4	Presentation of the results obtained

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	methods of conducting scientific research	O.W5	classroom observation, project
Skills – Student can:			
U1	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	project
K2	use objective sources of information	O.K7	project

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation of a report	20
preparation of a project	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Introduction to statistical software	W1, U1	classes, seminar
2.	Descriptive statistics	W1, U1	classes, seminar
3.	Comparing means in groups	W1, U1	classes, seminar
4.	Assessment of relationships between variables	W1, U1	classes, seminar
5.	Logistic analysis	W1, U1	classes, seminar
6.	Survival analysis	W1, U1	classes, seminar
7.	Analysis of repeated measurements	W1, U1	classes, seminar
8.	Summary of parametric tests	W1, U1	classes, seminar
9.	Nonparametric tests - 1	W1, U1	classes, seminar
10.	Nonparametric tests - 2	W1, U1	classes, seminar

11.	Nonparametric tests - 3	W1, U1	classes, seminar
12.	Final Project - 1	W1, U1, K1, K2	classes
13.	Final Project - 2	W1, U1, K1, K2	classes
14.	Presentation of student projects	W1, K1, K2	seminar
15.	Presentation of student projects	W1, K1, K2	seminar

Course advanced

Teaching methods:

computer classes, discussion, e-learning, project method, group work, computer room, seminar

Activities	Examination methods	Credit conditions
seminar	project	Assessment of the presentation of the student project
classes	classroom observation, project	Evaluation of class reports

Additional info

Entry requirements

no initial requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medicine in "OMICS"

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 15, classes: 15	2.0

Goals

C1	Acquiring knowledge and skills on issues related to personalized medicine in terms of OMICs.
C2	Developing awareness of science development, the availability of methods and tools in the field of personalized medicine
C3	General development of mental fitness, cognitive ability with particular emphasis on critical thinking
C4	Implementation for self-study and independent work through project classes and papers

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	project
W2	methods of conducting scientific research	O.W5	project
W3	indications for genetic tests performed with the aim of individualizing pharmacotherapy	C.W41	project
W4	the main mechanisms of drug action, and their changes in the system depending on age	C.W36	project
W5	genetic mechanisms for the acquisition of drug resistance by microorganisms and cancer cells	C.W11	project
W6	basics of diagnostics of gene and chromosomal mutations responsible for hereditary and acquired diseases, including neoplastic diseases	C.W9	project
W7	factors influencing the primary and secondary genetic balance of the population	C.W8	project
W8	basic concepts in the field of genetics	C.W1	project
W9	development, structure and functions of the human body in normal and pathological conditions	O.W1	project
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U2	inspire the learning process of others	O.U6	classroom observation
U3	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U4	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
U5	estimate the risk of a given disease becoming apparent in the offspring based on family predisposition and the influence of environmental factors	C.U5	classroom observation
U6	describe the changes in function of the organism in homeostasis disorder, determine its integrated reaction to physical effort, high and law teperature, blood or water loss, sudden verticalization, transition from sleep to wakefulness	C.U20	classroom observation
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K2	use objective sources of information	O.K7	classroom observation
K3	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
seminar	15

classes	15
analysis of the research material	10
preparation for examination	10
preparation for classes	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 25

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Introduction to the course	W1, W2, U2, U3	seminar
2.	Genomics and transcriptomics	W2, W3, U2, U3, U4	seminar
3.	Metabolomics	W2, W4, U2, U3, U4	seminar
4.	Epigenomics	W2, W3, W7, W9, U4, U5, U6	seminar
5.	Biological networks	W2, W9, K1, K2, K3	seminar
6.	Functional and structural analysis of the human genome	W5, W6, W7, W8, U1, U2, U3, K2, K3	classes
7.	Genomics of individual differences in the human population (genetic profiles)	W3, W7, W8, W9, U1, U2, U3, U4, U5, K1, K2, K3	classes
8.	Determining differences in the activity of human genes in pathological conditions	W1, W3, W4, W7, U1, U2, U3, U4, U5, K2, K3	classes
9.	Examples of analysis of the human metabolome	W2, U1, U5, K1, K2, K3	classes
10.	Examples of human epigenome analysis	W1, W2, U1, U5, K2, K3	classes
11.	Integration of "OMICs" data -1	W2, U1, K2, K3	classes
12.	Integration of "OMICs" data -2	W2, U1, K2, K3	classes
13.	Individual project - 1	U4, K1, K2, K3	classes
14.	Individual project - 2	U4, K1, K2, K3	classes
15.	Presentation of the projects	W2, U2, K1, K3	classes

Course advanced

Teaching methods:

case study, computer classes, classes in simulated conditions, demonstration, discussion, project method, group work,

seminar, simulation, workshop, practical classes

Activities	Examination methods	Credit conditions
seminar	project	Positive evaluation of the presentation
classes	classroom observation, project	Positive completing all practical and theoretical tasks and presentation of the final project.

Additional info

The student has to do a list of tasks recommended by the teacher for each class. It will be a condition for passing classes. The list of completed tasks will be attached to the e-learning platform in the form of a report after each exercise. In addition, the student will have to prepare the presentation and conduct a short discussion. The speech should last about 20 minutes. The topic will be implemented alone or in teams of two. The course participant will choose an issue from the list of topics proposed by the teacher. The paper should take into account the literature suggested by the teacher. However, it is expected that the topic will be expanded to include information from independent research into available scientific literature.
The assessment will cover:
• degree of understanding of the developed topic • diligence in preparing the presentation of the paper
• proper selection of source materials from reliable scientific sources
• ability to interest seminar participants in a selected topic • ability to conduct discussion after a paper

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Practical aspects of diagnostics of genetically determined diseases

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Acquiring information about: • principles of work in the cytogenetic laboratory and molecular biology laboratory • basics of medical genetics and methods of nucleic acid research • cytogenetic testing and principles of chromosome analysis • use of genetic databases
C2	Acquiring skills regarding: • basics of work in the cytogenetic laboratory and molecular biology laboratory • nucleic acid testing methods • cytogenetic methods • basic principles of chromosome analysis, interpretation of cytogenetic and molecular test results • use of genetic databases(basics)

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	group assessment

W2	normal human karyotype and different types of sex determination	C.W3	group assessment
W3	chromosome structure and molecular mutagenic background	C.W4	group assessment
W4	basic concepts in the field of genetics	C.W1	group assessment
W5	the rules for the inheritance of different numbers of traits, the inheritance of quantitative traits, the independent inheritance of traits and the inheritance of non-nuclear genetic information	C.W5	group assessment
W6	basics of diagnostics of gene and chromosomal mutations responsible for hereditary and acquired diseases, including neoplastic diseases	C.W9	group assessment
W7	aberrations of autosomes and heterosomes that cause disease, including oncogenesis and cancer	C.W7	group assessment
W8	phenomena of gene coupling and interaction	C.W2	group assessment
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	group assessment
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	group assessment
U3	analyze genetic crossbreeds and pedigrees of human traits and diseases, and assess the risk of having a child with chromosome aberrations	C.U1	group assessment
U4	make decisions about the need for cytogenetic and molecular tests	C.U3	group assessment
U5	perform morphometric measurements, analyze morphograms and record karyotypes of diseases	C.U4	group assessment
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	group assessment
K2	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	group assessment

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation for classes	30

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Basics of medical genetics	W1, W2, W3, W4, W8	seminar
2.	Methods for nucleic acids research	W2, W3, U2, U4, K1	classes, seminar
3.	Nucleic acid isolation, DNA sequencing (Sanger technique), interpretation of genetic tests results	W3, W6, U2, K1, K2	classes
4.	Classical cytogenetics, FISH technique	W2, W3, W6, W7, U1, U2, U4, U5, K1, K2	classes, seminar
5.	Interpretation of cytogenetic tests	W2, W7, U3, U4, U5, K1	classes
6.	Planning of molecular diagnostics (computer databases, designing PCR primers by the use of bioiformatic tools)	W5, W6, U1, U2, U3, U4, K1, K2	classes, seminar

Course advanced

Teaching methods:

case study, computer classes, laboratories (labs), seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	group assessment	class attendance
classes	group assessment	class attendance

Entry requirements

Completion of preliminary modules: • "Biochemistry with elements of chemistry" • "Genetics with molecular biology"

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Trends in nutrition of healthy people

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	The aim of the course is to broaden the knowledge about the pros and cons of fashionable diets during the last 5 years. The relationship between maintaining normal body weight and the quantity and quality of food consumed. In addition, students will learn the importance of energy expenditure associated with the type of physical activity carried out.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	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	assignment report
W2	the consequences of vitamin or mineral deficiencies and their excess in the body	C.W48	assignment report
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	assignment report
U2	inspire the learning process of others	O.U6	assignment report
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	assignment report
K2	to be guided by the well-being of a patient	O.K2	assignment report
K3	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	assignment report
K4	promote health-promoting behaviors	O.K6	assignment report
K5	use objective sources of information	O.K7	assignment report
K6	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	assignment report

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	10
preparation of a report	10
consultations with lecturer	8
Student workload	**Hours** 58
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Characteristics and assessment of the ketogenic diet	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar
2.	Characteristics and assessment of the DASH diet	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar
3.	Characteristics and assessment of a vegetarian diet.	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar
4.	Characteristics and assessment of the Copenhagen diet	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar
5.	Characteristics and assessment of the Montigniac's diet	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar
6.	Characteristics and assessment of the 8-hours diet	W1, W2, U1, U2, K1, K2, K3, K4, K5, K6	seminar

Course advanced

Teaching methods:

case study, discussion, group work, computer room, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	assignment report	Performing all assigned exercises - each diet means 1 exercise in the form of a properly prepared diet-menu for at least 3 days.

Additional info

Each assignment/exercise must achieve a positive mark.

Entry requirements

None

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Diet-sensitive genes - e-learning course

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** C. Preclinical course

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** e-learning: 30	2.0

Goals

C1	The purpose of this module is to familiarize students with common complex diseases, gene variability and their possible relationship with diet. The module contains basic information about multifactorial diseases such as obesity and type 2 diabetes; describes the various methods used to search for "candidate genes" in complex and polygenic diseases; provides data showing the importance of genetic and environmental factors interacting in predisposition to these diseases.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basic concepts in the field of genetics	C.W1	written examination
W2	phenomena of gene coupling and interaction	C.W2	written examination

W3	the rules for the inheritance of different numbers of traits, the inheritance of quantitative traits, the independent inheritance of traits and the inheritance of non-nuclear genetic information	C.W5	written examination
W4	basic directions of therapy development, in particular the possibilities of cellular, gene and targeted therapy in specific diseases	C.W42	written examination
W5	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	written examination
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	written examination
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	written examination
U3	critically evaluate the results of scientific research and adequately justify the position	O.U9	written examination
U4	make decisions about the need for cytogenetic and molecular tests	C.U3	written examination
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	written examination
K2	promote health-promoting behaviors	O.K6	written examination
K3	use objective sources of information	O.K7	written examination

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	30
preparation for classes	20
preparation for examination	10
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	The role of different genes in the development and predisposition to complex diseases such as obesity and type 2 diabetes • The importance of environmental factors and basic genetic causes • The complexity of the problem and the difficulty in identifying genes susceptibility to complex diseases • How to determine the mechanisms by which the genes involved, in collaboration with the environment, cause clinical disease • Different approaches used to look for candidate genes for obesity and type 2 diabetes	W1, W2, W3, W4, W5, U1, U2, U3, U4, K1, K2, K3	e-learning

Course advanced

Teaching methods:

e-learning

Activities	Examination methods	Credit conditions
e-learning	written examination	60% correct answer

Entry requirements

e-learning course

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Research ethics involving human in medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Students will become familiar with the ethical aspects of research involving human subjects in biomedicine.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	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	written credit

W2	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	written credit
W3	standards relating to patients' rights	D.W24	written credit
Skills – Student can:			
U1	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, written credit
U2	comply with ethical standards in professional activities	D.U13	classroom observation, written credit
U3	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, written credit
U4	follow the patient's rights	D.U15	classroom observation, written credit
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation
K2	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

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	15
preparation for colloquium	15
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Scandals in research with human subjects	W3, U2, U4, K1	seminar
2.	Medical research vs. treatment and care	W2, U2, U3, K1	seminar
3.	Basic terms and definitions in research ethics	W1, W2, K2	seminar
4.	National law and international standards. How to deal with the differences?	W2, U2, K2	seminar

5.	EBM, the evidence pyramid, a quality of evidence in research	W2, U1, K2	seminar
6.	Risk in biomedical research with human subjects	W1, U3, U4, K1	seminar
7.	Benefits and social value in research	W2, U2, K2	seminar
8.	Informed consent, assent and dissent in research	W1, U4, K1	seminar
9.	Research with elevated risk and high social value, emergency research, research with special populations	W1, W2, U1, U4, K1, K2	seminar
10.	Ethics of scientific publications	W1, W2, U1, U2, U3, K2	seminar

Course advanced

Teaching methods:

case study, textual analysis, discussion, problem solving method, case study method, group work

Activities	Examination methods	Credit conditions
seminar	classroom observation, written credit	attendance and active participation in classes

Additional info

For a written exam, the following grade thresholds apply:
100% – 95% 40-38 points – very good
92.5% – 87.5% 37-35 points – good plus
85% – 80% 34-32 points – good
77.5% – 70% 31-28 points – sufficient plus
67.5% – 60% 27-24 points – sufficient
57.5% or less 23 or less – insufficient
A score of at least 24 points is required to pass the exam.
In case of absence the student will be required to read additional articles designated by the teacher. Student’s knowledge of the article content will be examined.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Philosophy and ethics of public health

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Providing students with knowledge on basic concepts of public health ethics and theories of justice. Providing students with theories of public health, ethics of health management, and philosophical, political and legal dimensions of health policies.
C2	Providing students with utilitarian, liberal, communitarian, and egalitarian theories of justice
C3	Providing students with knowledge of quality of health measurements: QUALY, DALY and HYEs
C4	Providing students with knowledge on distributive justice, utilitarian distribution, health as a fundamental good, social determinants of health, medical triage, perfect and imperfect moral duty, therapeutic futility, principles of respect of autonomy, beneficence, ageism, quality of life.
C5	Providing students with knowledge on legal and ethical guidelines on epidemiological research (CIOMS, GEP)
C6	Providing students with knowledge on health industry in Europe and USA
C7	Providing students with knowledge on ethical aspects of health care system
C8	Providing students with knowledge and skill allowing them to analyze ethical aspects of public health programs and epidemics
C9	Providing students with knowledge and skills allowing them to analyze ethical aspects of public health policies and public health intervention
C10	Enabling students to present and justify an ethical statement concerning public health

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	written credit
W2	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	written credit
W3	functioning of health care system entities and social role of a physician	D.W8	written credit
W4	principles of motivating the patient to health-promoting behaviors and informing about unsuccessful prognosis	D.W15	written credit
W5	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	written credit
W6	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	written credit
W7	cultural, ethnic and national determinants of human behavior	D.W19	written credit

W8	patient's rights	D.W17	written credit
Skills – Student can:			
U1	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, written credit
U2	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, written credit
U3	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, written credit
Social competences – Student is ready to:			
K1	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation
K2	use objective sources of information	O.K7	classroom observation
K3	promote health-promoting behaviors	O.K6	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	15
preparation for test	15
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	The concept of "public health" and ethical dilemmas of public health	W1, W3, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar
2.	Politics and public health: political justification of public health intervention	W4, W5, W6, W7, U1, U2, U3, K1, K2, K3	seminar
3.	Theories of justice: utilitarianism, liberalism, egalitarianism and communitarianism	W1, W2, W3, W4, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar
4.	Justice in healthcare: access to healthcare and social determinants of health	W1, W2, W3, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar

5.	Rationing in healthcare	W1, W2, W3, W4, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar
6.	Ethical problem of emergency medicine: triage and micro-rationing	W1, W2, W3, W5, W7, W8, U1, U2, U3, K1, K2, K3	seminar
7.	Aging societies and justice	W4, W5, W6, W8, U1, U2, U3, K1, K2, K3	seminar
8.	Ethics and epidemics and catastrophes	W1, W3, W5, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar
9.	Ethics and transplantation	W1, W2, W3, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar
10.	Ethical aspects of public health intervention	W1, W2, W5, W7, W8, U1, U2, U3, K1, K2, K3	seminar
11.	Epidmiological research, learning healthcare system and ethics	W3, W6, W7, W8, U1, U2, U3, K1, K2, K3	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, discussion, educational film, seminar, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, written credit	Presence is obligatory. A student can be absent two times, without any excuse. In case of further absence a student is obliged to additional work assigned by a teacher. Students activity impacts his final mark To pass, student has to receive 50% on writing assignment

Entry requirements

Block

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Limit problems of human existence: suicide, assisted suicide, euthanasia

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0313 Psychology	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Providing students with knowledge on borderline phenomena concerning human existence and their legal as well as ethical aspects
C2	Enabling students to discern ethical aspects of decision-making process at the last state of human life
C3	Enabling students to discern different ethical and moral perspective at the end-of-life moment of human life (family's perspective, patient's perspective and physician's perspective) as well as cultural dimension of death and dying.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, essay, project
W2	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	classroom observation, essay, project
W3	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	D.W11	classroom observation, essay, project
W4	the main concepts, theories, principles and ethical rules serving as a general framework for the proper interpretation and analysis of moral and medical issues	D.W16	classroom observation, essay, project
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, essay
U2	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation, essay
U3	follow the patient's rights	D.U15	classroom observation, essay
Social competences – Student is ready to:			
K1	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation, essay
K2	use objective sources of information	O.K7	classroom observation, essay
K3	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, essay
K4	respect medical confidentiality and patients' rights	O.K3	classroom observation, essay
K5	to be guided by the well-being of a patient	O.K2	classroom observation, essay
K6	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, essay

Calculation of ECTS points

Activity form	Activity hours*
seminar	30

preparation of a paper	15
preparation for classes	15

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The phenomenon of suicide and its interpretations: medical, philosophical, religious	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
2.	The concept and practice of euthanasia.	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
3.	Euthanasia of minors: the practice and ethical justification	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
4.	The concept and history of palliative care	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
5.	The concept and practice of physician assisted suicide	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
6.	The concept of "a duty to die"	W1, W2, U1, U2, U3, K1, K2, K3, K4, K5, K6	seminar
7.	Euthanasia and organ transplantation: legal status and moral controversies	W1, W2, W3, W4, U1, U2, U3, K1, K2, K4	seminar
8.	The future of death. How the progress of medicine will impact the way we die?	W1, W2, W3, W4, U1, U2, U3, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, classes / practicals, discussion, e-learning, educational film, project method, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, essay, project	Presence is obligatory. A student can be absent two times, without any excuse. In case of further absence a student is obliged to additional work assigned by a teacher. Students activity impacts his final mark (50%) A student has to prepare and perform a presentation (20%, project) and an essay (30%) (a case study).

Entry requirements

Block

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Cultural psychology in the context of health and illness issues.

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0313 Psychology	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	Identify basic assumptions of cultural psychology in relation to the health and illness
C2	Interpret and explain cultural aspects of mental disorders, pain, stress and diseases.
C3	Recognize cultural influences on health beliefs and healthy lifestyles
C4	Understand appropriate communication between health care professionals and migrant patients.
C5	Read with full understanding scientific articles in the field of cultural health psychology, and use its terminology with ease.
C6	Use intercultural competences in personal contact with migrant patients or representatives some ethnic group.
C7	Propose appropriate coping strategies with respect to the ethnicity of the patient.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	test
W2	social factors influencing behaviour in health and disease, particularly in chronic disease	D.W2	test
W3	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	test
W4	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	test
W5	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	test
W6	basic psychological mechanisms of human functioning in health and disease	D.W9	test
W7	the role of stress in etiopathogenesis and disease progression, and the mechanisms for coping with stress	D.W12	test
W8	cultural, ethnic and national determinants of human behavior	D.W19	test
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	test, PP presentation
U2	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	test, PP presentation
U3	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	test, PP presentation
U4	talk to the adult patient, child and family using active listening and empathy techniques and talk to the patient about his or her life situation	D.U5	test, PP presentation
U5	inform the patient about the purpose, course and possible risks of the proposed diagnostic or therapeutic measures, and obtain his or her informed consent to take these measures	D.U6	test, PP presentation
U6	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	test, PP presentation
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	test

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
preparation for classes	10
preparation for examination	10

Student workload	**Hours** 50
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	1. Policy of the course. Health Psychology in the cultural context – introduction – part I.	W8	seminar
2.	2. Health Psychology in the cultural context – introduction – part II. Intercultural competences. Culture dimensions.	W6, W8	seminar
3.	3. Healthcare in multicultural societies. Attitudes of medical staff toward migrants.	W4, W5, U1, U6, K1	seminar
4.	4. Ethnocentrism, predjuces and stereotypes	W5, W8, U1	seminar
5.	5. Culture and developmental processes	W1, W2, W5, W7, U2	seminar
6.	6. Acculturative stress. Stress in different cultures.	W1, W3, W7, U1	seminar
7.	7. Coping strategies and social support theories in relation to different cultural contexts.	W2, W8, U2	seminar
8.	8. Culture and personality.	W2, W8, U1, U2	seminar
9.	9. Culture and emotions.	W1, W2, W3, U1, U3, U4	seminar
10.	10. Mental health of immigrants and representatives of ethnic groups.	W2, U2	seminar
11.	11. Mental disorders in cross-cultural studies. Culture bound syndromes.	W2, W3, U5, K1	seminar
12.	12. Culture and psychotherapy.	W2, W8, U1, K1	seminar
13.	13. Pain in cultural health psychology. Different definitions of pain.	W2, W3, U1	seminar

14.	14. Cancer and culture. Ethnic differences in the context of knowledge and attitudes toward cancer.	W2, W3, W8, U1, U3	seminar
15.	15. Culture and suicide.	W6, W8, U2, K1	seminar

Course advanced

Teaching methods:

discussion, educational film, case study method, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	test, PP presentation	1. Power point presentation aimed to apply theoretical concepts and theories to the chosen case study. 2. Written final test. 3. Attendance & Participation.

Entry requirements

Bierna znajomość języka angielskiego.

Body’s circadian rhythm in health and diseases

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	As part of this course, you will learn substantive and practical knowledge in the field of physiology and pathophysiology of the body's functioning in the circadian rhythm and its impact on health and well-being. The regulation and adaption mechanisms in the 24-hour internal clock depend on external factors related to light, such as: sleep-wake cycle, physical activity; and internal factors, such as: endocrine control, autonomic nervous system activity, gastrointestinal activity and food intake. Circadian rhythm disturbances are a risk factor for cardiovascular diseases and metabolic disorders. The student will be able to integrate basic knowledge with specialist knowledge and understand the importance of health behaviors and health promotion/disease prevention.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	basic psychological mechanisms of human functioning in health and disease	D.W9	oral answer, essay
W2	the role of stress in etiopathogenesis and disease progression, and the mechanisms for coping with stress	D.W12	oral answer, essay
W3	the principles of health promotion, its tasks and main lines of action, with particular reference to the role of elements of a healthy lifestyle	D.W14	classroom observation, oral answer
W4	basics of evidence-based medicine	D.W23	oral answer, essay
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, oral answer
U2	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	classroom observation, oral answer
U3	involve the patient in the therapeutic process	D.U7	classroom observation, oral answer
U4	provide advice on therapeutic recommendation compliance and following healthy lifestyle	D.U9	classroom observation, oral answer
U5	apply basic psychological motivational and supportive interventions	D.U11	classroom observation, oral answer
U6	critically analyse medical literature, including in English, and draw conclusions	D.U17	oral answer, essay
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, oral answer
K2	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation, oral answer
K3	promote health-promoting behaviors	O.K6	classroom observation, oral answer
K4	use objective sources of information	O.K7	oral answer, essay
K5	formulate conclusions from own measurements or observations	O.K8	oral answer, essay

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	10
kształcenie samodzielne	5
information collection	5

preparation of a project	10
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Cycles of nature - an introduction to biological rhythms - chronobiology - circadian rhythms in animals, plants, fungi and cyanobacteria - special properties of circadian clocks: self-sustainment in constant conditions, entrainment to zeitgebers and temperature compensation - chronobiological graphs - free running rhythm	W4, U6, K2, K4	seminar
2.	Circadian clock - molecular basis of circadian rhythms - input, oscillator, output - central clock and peripheral clocks - integration of internal and external factors - SCN - clock genes - neuroscience of sleep and wakefulness	W4, U6, K2, K4	seminar
3.	Circadian rhymes in scientific research - types of scientific research: (observation, analysis) and exploratory (clinical) - research challenges, problems and paradigms in sleep medicine, theses and hypotheses - ideas and passion - types of scientific texts (science essay) - bioethics in clinical research - scientific databases	W4, U6, K2, K4, K5	seminar
4.	Sleep-wake cycle - two-process model of sleep regulation of sleep, flip-flop switch model - quality and quantity of sleep - physiology of sleep - sleep architecture: NREM sleep, REM sleep, dreams - polysomnography, hypnogram, norms, assessment of sleep stages (AASM) - age-related changes in sleep	W1, W4, U6, K2, K4, K5	seminar
5.	Diagnosis of sleep-wake disorders - approach to the patient with sleep disorder - screening sleep questionnaires - standard procedures in sleep medicine and practice guideline: polysomnography, actigraphy, MSLT	W1, W3, W4, U2, U6, K1, K2, K4, K5	seminar

6.	ICSD-3 International Classification of Sleep Disorders - DSM-5 The Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association - dyssomnias (insomnia, hypersomnia, circadian rhythm sleep disorders) - parasomnias (abnormalities that occur while falling asleep, seeping or during arousal from sleep) - breathing-related sleep disorders - sleep related movement disorders - sleep-related problems in common medical conditions	W1, W2, W3, W4, U1, U2, U3, U4, U5, U6, K1, K2, K3, K4, K5	seminar
7.	Circadian rhythm sleep disorder - ASPS, DSPS - chronotype vs social life; how light affects health - shift work sleep disorder - seasonal affective disorders - circadian rhythm and light exposure impact on human performance and safety - treatment of sleep disorders as well as circadian rhythm disorders - behavioral therapies - sleep hygiene	W1, W2, W3, W4, U1, U2, U3, U4, U5, U6, K1, K2, K3, K4, K5	seminar
8.	Chronobiology and the impact of rhythm on cardiovascular system and on autonomic nervous system - circadian regulation of physiology (neuroendocrine, metabolic and immune regulation) - circadian regulation of mood, behavior and the impact of stress (drowsiness, memory, learning, cognitive and motor functions) - day-night variation in blood pressure and heart rate - disruption of the circadian rhythm as a risk factor for cardiovascular disease - treatment: chronomedicine in clinical practice, chronopharmacology, chronochemotherapy	W1, W2, W4, U2, U6, K1, K2, K4, K5	seminar
9.	Effect of circadian rhythm on the digestive system and metabolism - circadian regulation of metabolism: glucose, insulin - food as a time signal for the body clock in cell - circadian rhythm disturbances as a risk factor for metabolic disorders, obesity and type 2 DM - treatment: chronomedicine in clinical practice, chronopharmacology, chronochemotherapy	W1, W4, U2, U6, K1, K2, K4, K5	seminar
10.	Examine your circadian rhythm in practice: 24-hour ECG monitoring, 24-hour actigraphic examination. - Course evaluation.	W1, W2, W3, W4, U1, U2, U3, U4, U5, U6, K1, K2, K3, K4, K5	seminar

Course advanced

Teaching methods:

case study, brainstorm, discussion, educational film, staging, problem solving method, case study method, group work, seminar, participation in research, lecture with multimedia presentation, PBL Problem Based Learning, Tutoring

Activities	Examination methods	Credit conditions
seminar	classroom observation, oral answer, essay	- positive assessment on the basis of participation and activity during classes - final credit - scientific essay A scientific essay analyzes an individually selected scientific issue or problem related to the knowledge covered during the course on the basis of scientific arguments and factual information, and presents some individual opinions on the matter as well - class attendance (1 absence possible)

JAGIELLONIAN UNIVERSITY
MEDICAL COLLEGE

Business plan and marketing communication

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0414 Marketing and advertising	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** e-learning: 10, classes: 20	2.0

Goals

C1	Delivery of practical knowledge, skills and social competencies rules allowing for running businesses in increasingly competitive environment in medical sector.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	functioning of health care system entities and social role of a physician	D.W8	oral answer, project
Skills – Student can:			

U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	oral answer, project
U2	communicate and share knowledge with colleagues in a team	O.U8	oral answer, project
U3	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	oral answer, project
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	oral answer, project
K2	formulate opinions on the various aspects of the professional activity	O.K10	oral answer, project
K3	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	oral answer, project

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	10
classes	20
information collection	5
consultations with lecturer	2
preparation for classes	5
preparation of multimedia presentation	8
Student workload	**Hours** 50
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Managerial skills and competences among physicians	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
2.	Functions of effective manager in health care sector - review	W1, U1, U2, U3, K1, K2, K3	classes, e-learning

3.	Determinants of competitive advantage in medical sector	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
4.	Innovation in health care system - worldwide perspective	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
5.	Best practices in health care management	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
6.	Stakeholder’s analysis and management in medical business projects	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
7.	Strategic analysis in medical sector - review and analysis of tools	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
8.	Risk management in medical business	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
9.	Role of strategic planning in medicine - discussion and best practices	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
10.	Business goals and plans in medical business - workshops	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
11.	Business model and strategies - similiarities and differences	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
12.	Financial plan of medical practice budget	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
13.	Marketing communication and strategies in medicine	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
14.	Role of controlling in medical entrepreneurship and health care sector	W1, U1, U2, U3, K1, K2, K3	classes, e-learning
15.	How to build in practice (step by step) professional business plan - workshops for future phycisians	W1, U1, U2, U3, K1, K2, K3	classes, e-learning

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, classes / practicals, discussion, e-learning, problem solving method, project method, case study method, presentation, group work, workshop, lecture with multimedia presentation, practical classes, Mentoring

Activities	Examination methods	Credit conditions
e-learning	oral answer, project	Active participation during lectures
classes	oral answer, project	Preparation and presentation of business plan

Entry requirements

No entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Management and decision making

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0413 Management and administration	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 20, classes: 10	2.0

Goals

G1	To familiarize students with basic models of leadership
G2	To familiarize students with basic models of decision making

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	principles of teamwork	D.W18	classroom observation, project
W2	cultural, ethnic and national determinants of human behavior	D.W19	group assessment, project

Skills – Student can:			
U1	inspire the learning process of others	O.U6	group assessment
U2	communicate and share knowledge with colleagues in a team	O.U8	group assessment
U3	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	classroom observation, group assessment
U4	communicate with colleagues with constructive feedback and support	D.U12	classroom observation, group assessment
U5	apply basic psychological motivational and supportive interventions	D.U11	classroom observation, group assessment
U6	comply with ethical standards in professional activities	D.U13	classroom observation, group assessment
U7	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	group assessment
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K2	use objective sources of information	O.K7	classroom observation
K3	formulate conclusions from own measurements or observations	O.K8	classroom observation, group assessment
K4	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, group assessment
K5	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, group assessment

Calculation of ECTS points

Activity form	**Activity hours***
seminar	20
classes	10
case analysis	5
preparation for classes	10
preparation of a project	10
participation in simulation games	5

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Attributes of the leader	W1, U2, K1, K2	classes, seminar
2.	Tasks of the leader	W1, U1, U2, U4	classes, seminar
3.	Working with people	U1, U2, K3	classes, seminar
4.	Decision making	K3, K5	classes, seminar
5.	Conflict orchestration	U3, U4, U5, K4	classes, seminar
6.	Team work	W1, U2, U7, K4	classes, seminar
7.	Problem solving	W2, U3, U5, U6, K2	classes, seminar
8.	Change management	U4, U5, K3, K4	classes, seminar
9.	Difficulties and risks of leadership	U5, U6, U7, K1, K5	classes, seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, classes / practicals, discussion, educational game, group work, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, group assessment	good understanding of obligatory literature and active participation in the class room activities
classes	classroom observation, group assessment, project	min 50% of points for change management project or leadership skills assessment.

Additional info

This course is about leadership and decision making. We will discuss different alternatives and prefered models of leadership with their possible applications. Strong emphasis will be put on self reflection and self development. The leader is usually a common denominator in all failed projects of the past. Cognitive errors, judgement lapses and assessment bias can lead to professional and private failures. We will learn about strategies to minimize some of factors that increase our decision errors.

Entry requirements

no prerequisits

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Medical Writing

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** e-learning: 15, seminar: 15	2.0

Goals

C1	The aim of this subject it to familiarise students with medical writing.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of conducting scientific research	O.W5	essay
W2	basics of evidence-based medicine	D.W23	essay

W3	the process of shaping new specialties in the field of scientific discipline - medical sciences and achievements of leading representatives of Polish and world medicine	D.W22	essay
W4	the characteristics of modern medicine and its most important discoveries	D.W21	essay
W5	principles of teamwork	D.W18	essay
Skills – Student can:			
U1	inspire the learning process of others	O.U6	essay
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	essay
U3	critically evaluate the results of scientific research and adequately justify the position	O.U9	essay
U4	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	essay
U5	demonstrate responsibility for one's own professional development, contribute to the further development of sciences, transfer own knowledge to others	D.U22	essay
U6	critically analyse medical literature, including in English, and draw conclusions	D.U17	essay
U7	comply with ethical standards in professional activities	D.U13	essay
U8	communicate with colleagues with constructive feedback and support	D.U12	essay
Social competences – Student is ready to:			
K1	formulate opinions on the various aspects of the professional activity	O.K10	essay
K2	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	essay
K3	formulate conclusions from own measurements or observations	O.K8	essay
K4	use objective sources of information	O.K7	essay
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	essay
K6	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	essay

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	15
seminar	15

preparation for classes	20
preparation of a paper	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Class 1a. Introduction to medical writing (lecture - 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning
2.	Class 1b. Introduction to medical writing (lecture - 2x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning
3.	Class 2a. Bibliographic databases (seminar – 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	seminar
4.	Class 2b. Types of study in medical research and study design (lecture 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning
5.	Class 3a. Elements of a scientific manuscript (lecture 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning
6.	Class 3b. Abstract and cover letter writing practice (seminar 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	seminar
7.	Class 4a. The editorial process and mock manuscript submission (seminar – 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	seminar
8.	Class 4b. Reviewing and correcting poorly and well written manuscripts (seminar 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	seminar
9.	Class 5a. Secondary studies (lecture – 2x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning

10.	Class 5b. Grantsmanship (lecture 2x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	e-learning
11.	Class 6. Protocol/Abstract/Manuscript writing - consultations (seminar 3x45min)	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4, K5, K6	seminar

Course advanced

Teaching methods:

brainstorm, discussion, language conversation classes, group work, assignments solving, seminar, participation in research, lecture

Activities	Examination methods	Credit conditions
e-learning	essay	attendance and active participation during classes
seminar	essay	attendance and active participation during classes

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Disability and independent living. The social dimension.

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0313 Psychology	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** e-learning: 10, classes: 20	2.0

Goals

C1	To enable students to gain knowledge in the field of disability studies, that focus on the social dimension of disability, especially social processes that influence the independent living.
C2	Acquiring the ability to analyze and understand the social dimensions of the situation of people with disabilities.
C3	Acquiring competence in analyzing and interpreting the global and local social processes connected to independent living of disabled persons.
C4	The course is designed to acquaint students with contemporary debates on disability and independent living. We will discuss global and local social transformations that affect the lives of disabled citizens. The course will be initiated by studying different approaches to disability (the medical model, the social model, the human rights-based approach). Then using the life course approach we will discuss the most important issues connected with disability on different stages of life: childhood, youth, adulthood and old age. We will analyze how contemporary discourses on disability shape the situation of disabled patients including development in accessibility, IT, public policies as well as disability rights movement. Our discussions will be based on international sociological research and the Convention on the Rights of Persons with Disabilities (CRPD). We will discuss dilemmas and diverse solutions that support independent living, and tackle topics such as personal assistance, supported housing, accessibility, parenthood, and reproductive rights and diversity within disability community. Discussing practical solutions will allow students to understand how disabled persons practice independent living, what challenges they face and how to understand the role of medical professionals in the changing social context.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	classroom observation, test, written credit
W2	social factors influencing behaviour in health and disease, particularly in chronic disease	D.W2	classroom observation, test, written credit
W3	forms of violence, models explaining domestic and institutional violence, the social determinants of the various forms of violence and the role of the doctor in recognizing it	D.W3	classroom observation, test, written credit
W4	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	classroom observation, test, written credit
W5	functioning of health care system entities and social role of a physician	D.W8	classroom observation, test, written credit
W6	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation, test, written credit
W7	psychosocial consequences of hospitalization and chronic disease	D.W7	classroom observation, test, written credit
W8	the role of the patient's family in the treatment process	D.W10	classroom observation, test, written credit

W9	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	D.W11	classroom observation, test, written credit
W10	cultural, ethnic and national determinants of human behavior	D.W19	classroom observation, test, written credit
W11	standards relating to patients' rights	D.W24	classroom observation, test, written credit
Skills – Student can:			
U1	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	classroom observation, written credit
U2	build an atmosphere of trust throughout the entire diagnostic and treatment process	D.U4	classroom observation, written credit
U3	provide advice on therapeutic recommendation compliance and following healthy lifestyle	D.U9	classroom observation, written credit
U4	follow the patient's rights	D.U15	classroom observation, written credit
U5	take action to improve the quality of life of patients and prevent it from deteriorating in the future	D.U19	classroom observation, written credit
U6	inspire the learning process of others	O.U6	classroom observation, written credit
U7	choose treatment that minimizes the social consequences for the patient	D.U3	classroom observation, written credit
U8	talk to the adult patient, child and family using active listening and empathy techniques and talk to the patient about his or her life situation	D.U5	classroom observation, written credit
U9	show responsibility for improving your qualifications and transferring knowledge to others	D.U16	classroom observation, written credit
U10	identify risk factors for violence, recognize violence and respond accordingly	D.U10	classroom observation, written credit
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	respect medical confidentiality and patients' rights	O.K3	classroom observation
K3	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
K4	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
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
e-learning	10
classes	20
preparation for classes	15
conducting literature research	15

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Sociological perspectives on disability. Medical, social and human-rights based approach. Statistical data on disability. Biological disability and disability assessment.	W1, W2, U1	e-learning
2.	Life-course approach and trajectories of disability. Childhood, adulthood, old age, and disability.	W1, W2, U1, U5, U8, K1, K3	e-learning
3.	Human-rights based approach and the Convention on the Rights of Persons with Disabilities.	W10, W11, W4, U4, U9, K2, K5	e-learning
4.	Independent living: personal assistance, user-led services, and reasonable accommodation.	W10, W2, W4, W5, W7, W8, U5, K1	e-learning
5.	Disability, globalization and challenges of contemporary societies.	W1, W10, W4, U2, K3, K4, K5	e-learning
6.	Social attitudes to disability: stigmatization and ableism and coping strategies.	W4, W6, U1, U2, K1, K3, K4, K5	classes
7.	Acquiring disability and adaptation.	W1, W2, W4, U1, U3, K3	classes
8.	Accessibility and disabled patient. Accessibility of medical services and institutions.	W11, W2, W3, W6, W7, U4, U7, K2	classes
9.	Adulthood and disability. Parenting with disability.	W2, W7, U1, U2, U4, U5, U7, U8, K1, K3	classes
10.	Families, disability and care. The role of the family in care work. Feminization of care work and the global care chains.	W3, W8, U2, U4, U8, K1, K3	classes
11.	Violence against persons with disabilities and it's prevention.	W10, W11, W3, W8, U10, U2, U4, K1	classes

12.	Body, technology, disability. Embodiment theories and IT development.	W10, W2, W4, W5, W6, W9, U2, U5, U9, K1	classes
13.	Structural challenges and public policy (case studies).	W1, W11, W2, W5, W8, U4, U6, U7, U9	classes
14.	Disability rights movement	W11, W4, W5, W7, U4, U6, U7, K1, K2, K4, K5	classes
15.	Disability and future - new challenges, new solutions.	W1, W10, W2, U6, U9, K3, K4, K5	classes

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, classes / practicals, discussion, educational film, problem solving method, presentation, group work, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
e-learning	test, written credit	written assignment - test
classes	classroom observation, written credit	Active contribution during classes and written assignment (review of a chosen scientific research paper presenting empirical research in the field of social aspects of disability)

Additional info

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Ethical aspects of interpersonal communication in medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism

Periods	**Examination**	**Number of ECTS points**
Semester 5, Semester 6	graded credit **Activities and hours** seminar: 20, e-learning: 10	2.0

Goals

C1	The aim of the course is to discuss an overview of different international health communication theories and to assess the feasibility of incorporating therapeutic values contained in medical models of communication into clinical practice based on an analysis of empirical research (taking into account the following models: biomedical, holistic, humanistic, linear, interactive and transactional). In order to communicate effectively with patients, it is necessary to acquire professional knowledge on the principles of medical communication models and the ability to apply them in practice.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	standards relating to patients' rights	D.W24	oral answer

W2	principles of motivating the patient to health-promoting behaviors and informing about unsuccessful prognosis	D.W15	classroom observation
W3	functioning of health care system entities and social role of a physician	D.W8	oral answer
W4	the role of the patient's family in the treatment process	D.W10	classroom observation
W5	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	assignment report
W6	principles and methods of communication with the patient and his/her family, which are aimed at building empathic, trust-based relationships	D.W5	classroom observation
W7	the social dimension of health and disease, the impact of the social environment (family, social networks) and social inequalities and socio-cultural differences on health, and the role of social stress in health and self-destructive behaviors	D.W1	oral answer
W8	social factors influencing behaviour in health and disease, particularly in chronic disease	D.W2	oral answer
W9	forms of violence, models explaining domestic and institutional violence, the social determinants of the various forms of violence and the role of the doctor in recognizing it	D.W3	oral answer
W10	social attitudes towards the importance of health, disease, disability and old age, the social consequences of disease and disability and social and cultural barriers, and the concept of quality of life as determined by the state of health	D.W4	oral answer
W11	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 answer
W12	patient's rights	D.W17	assignment report
Skills – Student can:			
U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U2	critically evaluate the results of scientific research and adequately justify the position	O.U9	oral answer
U3	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	oral answer
U4	talk to the adult patient, child and family using active listening and empathy techniques and talk to the patient about his or her life situation	D.U5	classroom observation
U5	inform the patient about the purpose, course and possible risks of the proposed diagnostic or therapeutic measures, and obtain his or her informed consent to take these measures	D.U6	classroom observation

U6	involve the patient in the therapeutic process	D.U7	classroom observation
U7	provide the patient and his or her family with information about unfavorable prognosis	D.U8	classroom observation
U8	provide advice on therapeutic recommendation compliance and following healthy lifestyle	D.U9	classroom observation
U9	comply with ethical standards in professional activities	D.U13	classroom observation
U10	follow the patient's rights	D.U15	classroom observation
U11	recognise the ethical dimension of medical decisions and distinguish between factual and normative aspects	D.U14	classroom observation
U12	show responsibility for improving your qualifications and transferring knowledge to others	D.U16	classroom observation
U13	communicate with colleagues with constructive feedback and support	D.U12	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	assignment report
K3	respect medical confidentiality and patients' rights	O.K3	assignment report
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	oral answer
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral answer
K6	promote health-promoting behaviors	O.K6	oral answer
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	oral answer

Calculation of ECTS points

Activity form	**Activity hours***
seminar	20
participation in simulation games	10
case analysis	10

preparation of a report	5
e-learning	10

Student workload	**Hours** 55
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	What are key communication issues in health research? What is the relationship between health care and justice?	W1, W3, U9, K8	seminar, e-learning
2.	An overview of different international health communication theories.	W1, W3, U2, K7	seminar, e-learning
3.	Big data security and privacy issues in healthcare.	W11, U9, K3	seminar, e-learning
4.	Ethical discretion and the duty of professional secrecy in health care.	W11, U11, U9, K3	seminar
5.	What is healthcare advertising? Legal and ethical aspects.	W10, W11, U12, U8, U9, K2	seminar, e-learning
6.	How doctors and nurses are portrayed in the media and in health care advertising.	W10, W11, U9, K5, K7, K8	seminar, e-learning
7.	The effect of the internet on the patient-doctor relationship.	W11, U11, U9, K10	seminar
8.	Ethical aspects of healthcare public relations.	W11, W3, U11, K10	seminar
9.	Metaphors in healthcare: to better comprehend and to improve awareness. Examples of social media marketing in healthcare.	W10, W7, W8, U9, K4, K6, K7, K8	seminar
10.	Doctors and healthcare professionals - comparison of communication models. Doctors, nurses, midwives, physiotherapists, paramedics, and the others working together.	W12, W2, W3, W4, U13, K9	seminar
11.	Therapeutic and clinical communication. Doctor versus researcher - similarities, differences, conflict of interest.	W11, W6, U10, U11, U9, K10, K2, K7, K8	seminar
12.	Managing patient complaints and dissatisfaction. Examples of conflict management behavior in many different situations.	W10, W5, W8, W9, U1, U10, U12, U3, U4, U5, U6, U7, U8, K1, K2, K4, K5, K6	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, discussion, educational film, staging, group work, seminar, workshop, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, oral answer, assignment report	preparation for classes and active participation in discussions and class work - 50%; - preparation and delivery of a paper / presentation - 20%; preparation of a written analysis of a selected case / problem - 30%.
e-learning		

Entry requirements

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JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Internal Medicine - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2022/23
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 6	credit **Activities and hours** professional practice: 120	4.0

Goals

C1	Gaining knowledge about the functioning of the internal medicine ward, improving the skills of physical examination, deepening knowledge about the basic laboratory tests, expanding knowledge about imaging tests.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	booklet of practical skills
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practical skills
Skills – Student can:			

U1	identify medical problems and prioritize medical management	O.U1	booklet of practical skills
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practical skills
U3	plan the diagnostic procedure and interpret its results	O.U3	booklet of practical skills
U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practical skills
U5	communicate and share knowledge with colleagues in a team	O.U8	booklet of practical skills
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	booklet of practical skills
K2	respect medical confidentiality and patients' rights	O.K3	booklet of practical skills
K3	to be guided by the well-being of a patient	O.K2	booklet of practical skills
K4	formulate conclusions from own measurements or observations	O.K8	booklet of practical skills
K5	use objective sources of information	O.K7	booklet of practical skills
K6	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	booklet of practical skills

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	120
Student workload	**Hours** 120
Workload involving teacher	**Hours** 120
Practical workload	**Hours** 120

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	During clerkship, student should: 1. Learn organization of an internal ward/department and organizational links of the ward/department with outpatient health care system; 2. practice physical examination and medical history collecting skills; 3. learn emergency procedures (resuscitation); 4. practice diagnosing and differentiation of basic disease entities, with special consideration of acute cases; 5. learn to properly interpret laboratory, radiological and pathomorphological tests and examination results; 6. participate in medical rounds; 7. perform routine procedures such as intravenous injections, applying drips, catheterizing etc.; 8. collect specimens for diagnostic tests.	W1, W2, U1, U2, U3, U4, U5, K1, K2, K3, K4, K5, K6	professional practice

Course advanced

Teaching methods:

case study, textual analysis, discussion, e-learning, problem solving method, case study method, group work, professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practical skills	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC SME Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Anesthesiology and Intensive Care

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24, 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, C. Preclinical course, F. Clinical procedural sciences
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** seminar: 13, classes: 15	3.0

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	examination **Activities and hours** seminar: 8, classes: 19, e-learning: 8	2.0

Goals

C1	Introduction to the basics of the subject Anesthesiology and Intensive Care, in particular: - principle of perioperative safety, preparing the patient for surgery, performing general anesthesia, local anesthesia and controlled sedation.
C2	Acquainting with current guidelines of cardiopulmonary resuscitation and management of life-threating states in adult.
C3	Awarning students of the need to systematically supplement and update their knowledge in this area. Acquaintance with the principles of cooperation in a group and taking responsibility for timely and reliable performance entrusted tasks.
C4	Introduction into the intensive care issue

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation, multiple choice test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practical skills, booklet of practice, clinical case presentation, multiple choice test
W3	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	classroom observation, clinical case presentation, multiple choice test
W4	postoperative treatment with analgesic therapy and postoperative monitoring	F.W5	classroom observation, clinical case presentation, multiple choice test
W5	indications and rules for the use of intensive care	F.W6	classroom observation, clinical case presentation, multiple choice test
W6	guidelines for cardiopulmonary resuscitation of newborns, children and adults	F.W7	booklet of practical skills, booklet of practice, clinical case presentation, multiple choice test
W7	principles of functioning of the integrated system National Medical Rescue Service	F.W8	clinical case presentation, multiple choice test
W8	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	booklet of practice, classroom observation, clinical case presentation, multiple choice test

W9	the principles of suspicion and diagnosis of brain death	F.W15	booklet of practice, clinical case presentation, multiple choice test
W10	the most common complications associated with anesthesia, sedation and perioperative period	F.W19	clinical case presentation, multiple choice test
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation
U3	plan the diagnostic procedure and interpret its results	O.U3	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	booklet of practical skills, classroom observation, clinical case presentation
U6	inspire the learning process of others	O.U6	booklet of practical skills, classroom observation, clinical case presentation
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practical skills, classroom observation, clinical case presentation
U8	communicate and share knowledge with colleagues in a team	O.U8	booklet of practical skills, classroom observation, clinical case presentation
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	booklet of practical skills, classroom observation, clinical case presentation
U10	adhere to the principles of asepsis and antisepsis	F.U3	booklet of practical skills, booklet of practice, classroom observation, clinical case presentation
U11	make a peripheral puncture	F.U5	booklet of practical skills, booklet of practice, clinical case presentation
U12	perform basic resuscitation procedures using an automatic external defibrillator and other emergency procedures and first aid	F.U10	booklet of practical skills, clinical case presentation
U13	operate according to the algorithm of advanced resuscitation activities	F.U11	booklet of practical skills, clinical case presentation

U14	monitor the patient's condition in the post-operative period based on basic vital parameters	F.U12	booklet of practical skills, booklet of practice, clinical case presentation
U15	to pass on information about the death of a close friend and relative	F.U34	booklet of practical skills, classroom observation, clinical case presentation
U16	operate according to a current algorithm for advanced resuscitation activities: a) is able to open the airway using non-instrumented and instrumented techniques endoscopic retrograde cholangiopancreatography) b) is able to ventilate the patient with a self-expanding bag with a face mask c) is able to operate the manual defibrillator safely	F.U27	booklet of practical skills, clinical case presentation
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	booklet of practical skills, booklet of practice
K2	to be guided by the well-being of a patient	O.K2	booklet of practical skills, booklet of practice
K3	respect medical confidentiality and patients' rights	O.K3	booklet of practical skills, booklet of practice
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	booklet of practical skills, booklet of practice
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	booklet of practical skills, booklet of practice
K6	promote health-promoting behaviors	O.K6	booklet of practical skills, booklet of practice
K7	use objective sources of information	O.K7	booklet of practical skills, booklet of practice

Calculation of ECTS points

Semester 7, Semester 8

Activity form	**Activity hours***
seminar	13
classes	15
Student workload	**Hours** 28
Workload involving teacher	**Hours** 28
Practical workload	**Hours** 15

* hour means 45 minutes

Semester 9, Semester 10

Activity form	Activity hours*
seminar	8
classes	19
e-learning	8
preparation for examination	30
preparation for classes	5
case analysis	10
professional practice	10
conducting literature research	5
participation in examination	2

Student workload	**Hours** 97
Workload involving teacher	**Hours** 35
Practical workload	**Hours** 39

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Evaluation of the patient and preoperative medication. General anesthesia. Recovery from anesthesia, patients selection after recovery. Anesthesia of elderly patients. ALS	W10, W3, W4, W5, W6, W7, W8, W9, U1, U10, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes, seminar, e-learning
2.	Anesthesia for children. Regional anesthesia . Pain management and sedation in ICU patients. Drugs in ICU patients (pharmacokinetics, pharmacodynamics).	W1, W2, W4, W5, W9, U1, U10, U11, U12, U13, U15, U3	classes, seminar

3.	Critical care in neurology and neurosurgery. Seizures. Evaluation of the comatose patient. Brain death. Long term catheters, venous, artery lines. Infections in surgical patients-preventions, laboratory diagnosis, monitoring -related bacteremia and sepsis. Antibiotic prophylaxis in surgical theatres	W10, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes, seminar
4.	Obstetric anesthesia and pain relief in labour. Principles of mechanical ventilation. Respiratory failure.	W1, W10, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes
5.	Cardiovascular management in CCU-diagnosis, monitoring and treatment. Diagnosis and treatment of the shock syndrome. Metabolism in critical patient. Dehydratations and electrolities supply, nutritional failure, principles of parenteral nutrition and enteral feeding. Drugs in ICU. Infections in surgical ICU-preventions, laboratory diagnosis, monitoring -related bacteriemia and sepsis. Toxic and septic shock. Bacterial hospital-aquired pneumonia and VAP.	W1, W10, W2, W3, W4, W5, W6, W8, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes
6.	ICU patient after Severe trauma. AKI	W1, W10, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes

Course advanced

Semester 7, Semester 8

Teaching methods:

case study, brainstorm, clinical classes, discussion, e-learning, group work, seminar, high fidelity simulation

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Active participation in seminar classes - active participation in scenario, problem solving, assessment of practical ALS skills, ventilation and external heart massage, assessment of compliance with ERC recommendations. No absence available.
classes	booklet of practical skills, classroom observation, multiple choice test	Presence on clinical exercises and practical- active participation and discution the cases - one justified absence from practical exercises or clinical, it is possible to make up missed classes with other groups (no more than 3-4 students per CLR group).

Semester 9, Semester 10

Teaching methods:

case study, brainstorm, clinical classes, discussion, e-learning, educational film, presentation, group work, lecture with multimedia presentation, practical classes

Activities	Examination methods	Credit conditions
seminar	booklet of practice, clinical case presentation	Active participation in seminar classes. ase presentation
classes	booklet of practical skills, classroom observation, multiple choice test	Presence on clinical exercises and practical- active participation and discution the cases - one justified absence from practical exercises or clinical, it is possible to make up missed classes with other groups (no more than 3-4 students per CLR group). Case presentation.
e-learning	booklet of practice, multiple choice test	Presence on lectures

Additional info

Entry requirements

completed and passed courses: physiology, anatomy, internal medicine, surgery, padiatrics, neurosurgery, neurology, radiology, orthopedics and traumatology.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Clinical Genetics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** e-learning: 24	2.0

Goals

C1	Providing up-to-date knowledge regarding the clinical picture of the most common hereditary diseases (including monogenic diseases, chromosomal aberrations, metabolic diseases and cancers).
C2	Providing current knowledge on conducting genetic counseling.
C3	Providing up-to-date knowledge about prenatal diagnosis and the role of genetics in reproductive failures.
C4	Providing current knowledge on primary, secondary and tertiary prevention of hereditary diseases.
C5	Acquiring knowledge and practical foundations on the subject of modern genetic diagnostics using molecular biology techniques and cytogenetic methods. Rules for the interpretation of genetic testing results in the context of genetic counseling.

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	test
W2	symptoms and course of diseases	O.W2	test
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	test
W4	environmental and epidemiological determinants of the most frequent diseases	E.W1	test
W5	basic methods of fetal diagnostics and therapy	E.W5	test
W6	environmental and epidemiological determinants of the most frequent human neoplastic diseases	E.W23	test
W7	basics of early detection of neoplastic diseases and principles of screening in oncology	E.W24	test
W8	the causes, symptoms, principles of diagnosis and therapeutic management of the most common hereditary diseases	E.W37	test
W9	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	test
W10	theoretical and practical basics of laboratory diagnostics	E.W40	test
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	test
U2	plan the diagnostic procedure and interpret its results	O.U3	test
U3	plan own learning activities and constantly learn in order to update own knowledge	O.U5	test
U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	test
U5	communicate and share knowledge with colleagues in a team	O.U8	test
U6	critically evaluate the results of scientific research and adequately justify the position	O.U9	test
U7	carry out a medical history with an adult patient	E.U1	test
U8	carry out a medical interview with the child and his or her family	E.U2	test
U9	carry out a physical examination of a child of all ages	E.U4	test
U10	perform differential diagnosis of the most common diseases of adults and children	E.U12	test
U11	plan diagnostic, therapeutic and prophylactic procedures	E.U16	test
U12	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	test
U13	maintain patient's medical records	E.U38	test
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	test
K2	to be guided by the well-being of a patient	O.K2	test
K3	respect medical confidentiality and patients' rights	O.K3	test
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	test
K5	use objective sources of information	O.K7	test
K6	formulate conclusions from own measurements or observations	O.K8	test

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	24
preparation for classes	10
preparation for classes	20
preparation of multimedia presentation	6

Student workload	**Hours** 60
Workload involving teacher	**Hours** 24

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Basic concepts of genetics, the value of deciphering of the human genome in medical practice. Mutagenesis and teratogens. Phenocopies and genocopies. The basics of dysmorphology.	W1, W4, U1	e-learning
2.	Construction and analysis of a pedigree in medical genetics. Theoretical and empirical risks in genetics.	W2, W8, U1, U10, U7, U8, U9, K1, K2, K3	e-learning
3.	Mendelian and non-Mendelian inheritance; Mitochondrial diseases, complex diseases.	W1, W2, W4, W8, U1, U10, U7, U8, U9	e-learning
4.	Chromosomal aberrations. Phenotype-genotype correlation.	W1, W2, W4, W8, U1, U4, U7, U8, U9	e-learning
5.	Genetic basis of cancer. Diagnostics, genetic counseling and prevention in hereditary cancers.	W1, W2, W6, W7, W9, U1, U11, U3, U4	e-learning

6.	Principles of genetic counseling. Psychological, ethical and social issues in genetic counseling. Patients' support groups.	W2, W3, U1, U11, U13, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K6	e-learning
7.	Diagnosing genetically determined diseases based on the analysis of dysmorphic features. Diagnostic strategy in chromosomal aberrations.	W2, W8, W9, U1, U4, U5, U7, U8, U9, K1, K2, K3	e-learning
8.	Genetic diagnosis and counseling in monogenic and in complex diseases.	W2, W8, W9, U1, U4, U5, U7, U8, U9, K1, K2, K3	e-learning
9.	Newborn baby with suspected genetic disease.	W2, W8, W9, U1, U10, U2, U3, U4, U5, U9, K2, K5, K6	e-learning
10.	Disorders of sex determination. Diagnostic strategy and genetic counseling.	W2, W8, U1, U10, U4, U7, U8, U9, K1, K2, K3, K6	e-learning
11.	Genetic aspects of infertility. Preimplantation diagnosis and prenatal testing; indications, methods, interpretation of results.	W2, W4, W5, W8, U1, U11, U2, U4, U7, K1, K2, K3, K5, K6	e-learning
12.	Genetic factors in the etiology of intellectual disability, autism and common neurologic and psychiatric conditions. Behavioral genetics.	W2, W8, U1, U10, U13, U2, U4, U7, U8, U9, K1, K2, K3, K4, K5, K6	e-learning
13.	Genetic aspects of selected diseases of the circulatory, digestive, respiratory, urinary and hematopoietic systems.	W2, W3, W4, U3, K5, K6	e-learning
14.	Inborn errors of metabolisms.	W2, W8, U1, U11, U12, U13, U2, U3, U4, U5, U7, U8, U9, K1, K2, K3, K4, K5, K6	e-learning
15.	Modern molecular and cytogenetic tests. Interpretation of the results of genetic testing in a clinical context.	W10, W2, W3, W5, W8, W9, U1, U11, U12, U13, U2, U6, K5, K6	e-learning

Course advanced

Teaching methods:

case study, classes / practicals, demonstration, discussion, case study method, presentation, group work, seminar, lecture, lecture with multimedia presentation, practical classes

Activities	Examination methods	Credit conditions
e-learning	test	at least 18/30 points (written test)

Additional info

Entry requirements

not applicable

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Clinical Immunology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	examination **Activities and hours** seminar: 10, classes: 8	1.0

Goals

C1	To gain a basic knowledge in the field of clinical immunology and transplantology important to further education in paediatrics, oncology and internal diseases.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	multiple choice test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	multiple choice test

Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	assessment by the teacher
U2	plan the diagnostic procedure and interpret its results	O.U3	assessment by the teacher
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	assessment by the teacher
U4	plan diagnostic, therapeutic and prophylactic procedures	E.U16	assessment by the teacher
U5	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	credit
U6	identify life-threatening conditions that require immediate medical intervention	O.U2	assessment by the teacher
U7	plan own learning activities and constantly learn in order to update own knowledge	O.U5	assessment by the teacher
U8	maintain patient's medical records	E.U38	assessment by the teacher
U9	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	assessment by the teacher
U10	communicate and share knowledge with colleagues in a team	O.U8	assessment by the teacher
U11	critically evaluate the results of scientific research and adequately justify the position	O.U9	multiple choice test
U12	carry out a physical examination of a child of all ages	E.U4	credit
U13	carry out a medical interview with the child and his or her family	E.U2	assessment by the teacher
U14	plan specialist consultations	E.U32	assessment by the teacher
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	assessment by the teacher
K2	to be guided by the well-being of a patient	O.K2	assessment by the teacher
K3	respect medical confidentiality and patients' rights	O.K3	assessment by the teacher
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	assessment by the teacher
K5	use objective sources of information	O.K7	multiple choice test
K6	formulate conclusions from own measurements or observations	O.K8	assessment by the teacher

Calculation of ECTS points

Activity form	Activity hours*
seminar	10
classes	8
preparation for classes	2
preparation for examination	8
preparation for classes	2

Student workload	**Hours** 30
Workload involving teacher	**Hours** 18
Practical workload	**Hours** 8

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Primary and secondary immunodeficiencies: pathogenesis, clinical symptoms, treatment	W1, W2, U1, U10, U11, U12, U13, U14, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6	classes, seminar
2.	Diagnosis of immunodeficiency. Laboratory tests assessing humoral immunity (immunoglobulin level, specific antibodies, level of circulating B lymphocytes). cellular immunity: Laboratory tests assessing cellular immunity (assessment of T lymphocyte levels and their subpopulations. In vitro functional tests - assessment of lymphocyte response after mitogen and antigen stimulation). Examination of granulocyte function, chemiluminescence test. Assessment of adhesion molecule expression. Flow cytometry. Clinical interpretation of test results	U5, K6	classes, seminar
3.	Autoimmune diseases generalized and organ-related. Immunopathogenesis, immunodiagnostics. The clinical significance of autoantibodies. Differential diagnosis of autoimmune diseases including autoimmune gastrointestinal disorders Diagnostics of organ-specific autoimmune diseases: liver, gastrointestinal tract, endocrine glands, immunological cytopenia.	W1, U2, U5, K6	classes, seminar
4.	Fundamentals of transplantology: HLA antigens, recipient-donor selection, (antibodies panel, cross-test), transplant rejection. Bone marrow / stem cell transplantation, clinical indications, GvH disease, management of patients before and after transplantation.	U11, U2, U3, U4, U6, U7, U9, K1, K2, K3, K4, K5, K6	classes, seminar

5.	Immunotherapy,immunosuppression Immune problems in cancer: host anti-tumor response, tumor-associated antigens and their role in the diagnosis and monitoring of cancer, the role of immunodetection, cancer immunotherapy	U11, K5	seminar

Course advanced

Teaching methods:

case study, clinical classes, laboratories (labs), seminar, practical classes

Activities	Examination methods	Credit conditions
seminar	multiple choice test	final test: multiple choice test containing 30 questions, 5 answers for each question, only one answer is correct
classes	multiple choice test, credit, assessment by the teacher	final test: multiple choice test containing 30 questions, 5 answers for each question, only one answer is correct

Additional info

Absence from classes: students absent from classes for justified reasons must do their classes within the time agreed with the teacher. An unjustified absence results in failure to pass the exam on the first date. A student who was not allowed to pass on the first date due to unjustified absences may proceed to the second date of exam only after completing the outstanding classes.

Entry requirements

Immunology – the knowledge in the field of basics of immunology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Evidence-Based Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	examination **Activities and hours** seminar: 27, classes: 9	2.0

Goals

C1	To teach students about concepts and the language of evidence-based medicine that are necessary to effectively communicate with health care professionals and patients
C2	To explain how to critically appraise evidence (primary studies, systematic reviews and clinical practice guidelines) on treatment, diagnosis and prognosis
C3	To teach the basics of statistics
C4	To encourage students to be critical while analyzing evidence and to gain skills necessary to learn and practice EBM
C5	To make students aware of the problems related to misinterpretation of study results

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basics of evidence-based medicine	D.W23	written examination
W2	methods of conducting scientific research	O.W5	written examination
Skills – Student can:			
U1	critically analyse medical literature, including in English, and draw conclusions	D.U17	written examination, project
U2	critically evaluate the results of scientific research and adequately justify the position	O.U9	project
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	project

Calculation of ECTS points

Activity form	Activity hours*
seminar	27
classes	9
preparation of a paper	5
preparation for examination	10
information collection	7
preparation for classes	2
Student workload	**Hours** 60
Workload involving teacher	**Hours** 36
Practical workload	**Hours** 9

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities

1.	Philosophy of EBM, asking clinical questions, types of clinical studies used in efficacy assessment, concepts related to methodology of clinical studies (randomization, concealment of allocation, intention-to-treat analysis, completeness of follow-up, blinding), types of study design (parallel, cross-over, factorial design), clinically important and surrogate outcomes	W1	seminar
2.	Presentation of the study results and their interpretation (risk, RR, RRR, RRI, ARR, OR, HR, NNT, NNH), statistical significance and clinical relevance, p-values and confidence intervals	W1, U1	seminar
3.	Practical - critical appraisal of the articles about therapy and prevention	W1, U1, U2, K1	seminar
4.	Critical appraisal of diagnostic studies	W1, U1, U2, K1	seminar
5.	Systematic reviews, metaanalysis - glossary and critical appraisal	W1, U1, U2, K1	seminar
6.	Cochrane reviews, network metaanalysis. Reporting of clinical studies - randomized controlled trials (CONSORT), observational studies (STROBE) and diagnostic studies (STARD)	W1, W2, U1, U2, K1	seminar
7.	Misleading claims in medical research - analysis of examples of most common traps and mistakes. Clinical practice guidelines - glossary, critical appraisal (AGREE II Instrument), methodology used to develop valid guidelines (GRADE)	W1, U1, K1	seminar
8.	Valid sources of evidence, principles of searching and using medical databases	K1	seminar
9.	Basic statistics – descriptive statistics, comparison of two or more populations, relationship between two quantitative/qualitative measures, analysis of the example data	W2	classes
10.	Comparison of two or more populations: t test, paired t-test, one-way analysis of variance (ANOVA)	W2	classes
11.	Relationship between two quantitative/ qualitative measures: correlation, simple linear regression, chi-squre test	W2	classes
12.	Project presentation (asking the clinical question, searching for evidence, critical appraisal of the identified study and interpretation of its results)	U1, U2	seminar

Course advanced

Teaching methods:

case study, textual analysis, computer classes, discussion, group work, assignments solving, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	written examination	receiving at least 60% points
classes	project	preparing and presenting the project

Entry requirements

knowledge of types of epidemiological studies; knowledge of pathophysiology and propedeutics of medicine; basic knowledge on the use of medicines; good English skills

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Otorhinolaryngology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods Semester 7, Semester 8	**Examination** examination **Activities and hours** seminar: 10, classes: 40	**Number of ECTS points** 3.0

Goals

G1	- knowledge of the symptoms, course and procedures in specific disease entities of the mouth, head and neck, taking into account age groups
G2	- teaching the students how to recognise the most vital symptoms of laryngological diseases
G3	- providing the knowledge on current treatment methods of the most serious laryngological diseases
G4	- familiarizing the students with the principles of procedure in otolaryngological emergencies

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	oral examination

W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral examination
W3	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
W4	the causes, symptoms, diagnostic and therapeutic management principles for the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age, including in particular: 1) acute and chronic abdominal diseases, 2) thoracic diseases, 3) diseases of extremities and head, 4) fractures of bones and injuries to organs	F.W1	oral examination
W5	selected issues in the field of pediatric surgery, including traumatology and otorhinolaryngology, as well as acquired defects and diseases being indications for surgical treatment in children	F.W2	oral examination
W6	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	oral examination
W7	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	oral examination
W8	postoperative treatment with analgesic therapy and postoperative monitoring	F.W5	oral examination
W9	indications and rules for the use of intensive care	F.W6	oral examination
W10	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	oral examination
W11	issues related to laryngology, phoniatrics and audiology, including 1) causes, clinical course, methods of treatment, complications and prognosis of diseases of the ear, nose, paranasal sinuses, oral cavity, pharynx and larynx, 2) facial nerve disease and selected cervical structures, 3) rules for diagnostic and therapeutic management of mechanical injuries to the ear, nose, larynx and esophagus, 4) rules for emergency management in otorhinolaryngology, in particular in laryngeal dyspnea, 5) principles of diagnostic and therapeutic management of hearing, voice and speech impairments, 6) principles of diagnostic and therapeutic management of head and neck neoplastic diseases	F.W12	oral examination
W12	the most common complications of the procedures listed in F.W2	F.W18	oral examination
W13	the most common complications associated with anesthesia, sedation and perioperative period	F.W19	oral examination
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	oral examination

U2	identify life-threatening conditions that require immediate medical intervention	O.U2	oral examination
U3	plan the diagnostic procedure and interpret its results	O.U3	oral examination
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	oral examination
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	oral examination
U6	inspire the learning process of others	O.U6	oral examination
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	oral examination
U8	communicate and share knowledge with colleagues in a team	O.U8	oral examination
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	oral examination
U10	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	F.U1	oral examination
U11	use basic surgical instruments	F.U2	oral examination
U12	adhere to the principles of asepsis and antisepsis	F.U3	oral examination
U13	manage a simple wound, put on and change a sterile surgical dressing	F.U4	oral examination
U14	examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination	F.U6	oral examination
U15	evaluate the result of a radiological examination in the most common types of fractures, particularly long bone fractures	F.U7	oral examination
U16	manage external bleeding	F.U9	oral examination
U17	monitor the patient's condition in the post-operative period based on basic vital parameters	F.U12	oral examination
U18	evaluate the condition of the unconscious patient according to international scoring scales	F.U21	oral examination
U19	recognise the symptoms of increasing intracranial pressure	F.U22	oral examination
U20	can tie a single and surgical knot	F.U28	oral examination
U21	identify and indicate methods of management of traumatic peripheral nerve damage	F.U36	oral examination
U22	perform basic laryngological examination of the ear, nose, pharynx and larynx	F.U25	oral examination
U23	conduct an approximate hearing test	F.U26	oral examination
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	oral examination
K2	to be guided by the well-being of a patient	O.K2	oral examination

K3	respect medical confidentiality and patients' rights	O.K3	oral examination
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	oral examination
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral examination
K6	promote health-promoting behaviors	O.K6	oral examination
K7	use objective sources of information	O.K7	oral examination
K8	formulate conclusions from own measurements or observations	O.K8	oral examination
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	oral examination
K10	formulate opinions on the various aspects of the professional activity	O.K10	oral examination
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	oral examination

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	40
preparation for classes	40

Student workload	**Hours** 90
Workload involving teacher	**Hours** 50
Practical workload	**Hours** 40

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	- Acquainting with the principles of examination in otolaryngology. - Learning the proper diagnostic and therapeutic procedure in diseases of otolaryngological organs (congenital, chronic and emergency); (inflammatory, trauma, cancer and defects), including but not limited to: - throat and larynx and neck diseases, excluding thyroid disorders, with particular emphasis on the treatment of cancer of these organs. - principles of hearing disorders treatment, - inflammatory, allergic and cancer diseases of the nose and paranasal sinuses. - rehabilitation after surgery.	W1, W10, W11, W12, W13, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U23, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

Course advanced

Teaching methods:

textual analysis, classes / practicals, clinical classes, demonstration, discussion, educational film, problem solving method, case study method, group work, assignments solving, seminar, Mentoring

Activities	Examination methods	Credit conditions
seminar	oral examination	min. 60% pts. + 1
classes	oral examination	min. 60% pts. + 1

Entry requirements

KNOWLEDGE OF THE BASICS OF ANATOMY AND ORGAN PHYSIOLOGY IN THE FIELD OF HEAD AND NECK. Attendance at classes and seminars is obligatory

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Nuclear Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** seminar: 12	1.0

Goals

C1	Introduction to nuclear medicine imaging techniques (planar imaging, SPECT, SPECT/CT, PET/CT). Understanding the indication and contraindications to radionuclide imaging, and the role of such imaging in clinical practice. The introduction to radionuclide therapy, including the most common indications, side effects and efficacy. Introduction to radiation protection.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	test

W2	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.W7	test
W3	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	E.W14	test

W4	possibilities of modern neoplastic therapy, including multimodal therapy, perspectives of cellular and gene therapies and their adverse effects	E.W25	test
W5	principles of combination therapies in oncology, algorithms of diagnostic and therapeutic procedures in the most common human cancers	E.W26	test
W6	principles of diagnosis and therapeutic management in the most common problems of palliative medicine, including 1) symptomatic treatment of the most common somatic symptoms, 2) cachexia management and the prevention and treatment of bedsores, 3) the most common emergencies in palliative medicine	E.W27	test
W7	principles for the treatment of pain, including cancer and chronic pain	E.W29	test
W8	development, structure and functions of the human body in normal and pathological conditions	O.W1	test
W9	principles for palliative treatment of terminal patient	E.W28	test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	test
U2	plan diagnostic, therapeutic and prophylactic procedures	E.U16	test
U3	define the concepts of nuclear medicine, radiopharmacy and radioimmunology	E.U44	test
U4	describe the physical processes that are the basis for radiopharmaceutical imaging	E.U45	test
U5	list radiopharmaceuticals used for scintigraphic diagnostics and PET, indicate indications for various types of diagnostic tests and the principles of interpretation of the obtained images	E.U46	test
U6	list the radioactive isotopes used for nuclear medicine therapies and justify their selection, as well as the basic isotope therapies, the indications for radionuclide therapy, how to assess the effectiveness of the therapy, the possible complications following the therapy	E.U47	test
U7	identify ways in which the ALARA radiological protection principle can be implemented in practice with regard to nuclear medicine	E.U48	test
U8	identify medical problems and prioritize medical management	O.U1	test
U9	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	test
U10	plan own learning activities and constantly learn in order to update own knowledge	O.U5	test
U11	inspire the learning process of others	O.U6	test
U12	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	test
U13	communicate and share knowledge with colleagues in a team	O.U8	test

U14	critically evaluate the results of scientific research and adequately justify the position	O.U9	test
U15	carry out a medical history with an adult patient	E.U1	test
U16	conduct a full and targeted physical examination of an adult patient	E.U3	test
U17	maintain patient's medical records	E.U38	test
Social competences – Student is ready to:			
K1	respect medical confidentiality and patients' rights	O.K3	test
K2	formulate conclusions from own measurements or observations	O.K8	test
K3	use objective sources of information	O.K7	test
K4	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures	O.K1	test
K5	to be guided by the well-being of a patient	O.K2	test
K6	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	test
K7	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	test
K8	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	test
K9	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	test
K10	promote health-promoting behaviors	O.K6	test
K11	formulate opinions on the various aspects of the professional activity	O.K10	test

Calculation of ECTS points

Activity form	**Activity hours***
seminar	12
preparation for classes	5
preparation for examination	5
case analysis	5

Student workload	**Hours** 27
Workload involving teacher	**Hours** 12

Practical workload	Hours 5

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Principles of nuclear medicine 1: definition of nuclear medicine; ionizing radiation, types of radiation, radioisotopes for diagnostics and treatment, production of isotopes, radiotracers/radiopharmaceuticals.	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U2, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	seminar
2.	Principles of nuclear medicine 2: imaging principles – scintigraphy including SPECT, PET, hybrid systems SPECT/CT, PET/CT, PET/MRI.	W2, W3, W4, W5	seminar
3.	Principles of nuclear medicine 3: radiation protection.	W3, W4, W5	seminar
4.	Neuroendocrine neoplasms (NEN): role of nuclear medicine in diagnostics and therapy (PRRT).	W1, W5	seminar
5.	Nuclear imaging of bones (bone scintigraphy, NaF PET/CT). Therapy of bone metastases. Radionuclide synovectomy.	W1	seminar
6.	Central nervous system imaging (dementia, degenerative movement disorders (Parkinson’s disease and Parkinsonian syndromes), epilepsy).	W1	seminar
7.	Nuclear cardiology (myocardial perfusion imaging – SPECT, PET; myocardial viability imaging).	W1, W2	seminar
8.	Thyroid cancer: from diagnosis to therapy and follow up.* (90 minutes)	W1, W5	seminar
9.	Immunoscintigraphy: research and implementation.	W1	seminar
10.	PET-CT in oncology.	W1, W4	seminar
11.	Parathyroid imaging: SPECT and PET.	W1	seminar
12.	Benign thyroid diseases and nuclear medicine (diagnostics and therapy).	W1	seminar
13.	Urogenital system imaging (focus on kidney scintigraphy and PET in prostate cancer). Imaging of liver haemangiomas.	W1, W5, W7	seminar

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, demonstration, discussion, case study method, group work, lecture with multimedia presentation, practical classes

Activities	Examination methods	Credit conditions
seminar	test	Test at the end of classes Attendance - 80% of classes Test - minimum 60% of positive answers

Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Occupational Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** classes: 4, seminar: 8, e-learning: 6	1.0

Goals

C1	to get students acquire theoretical and practical knowledge of defining occupational disease and the base of recognition (the legal and medical aspects)
C2	to get students knowledge of epidemiology of occupational diseases
C3	to get students knowledge of defined occupational diseases including: Pneumoconiosis, Berylliosis, Byssinoza, Metal fever, Diseases caused by the action of physical factors, Tumors of occupational origin, Occupational poisoning by heavy metals, Infectious diseases of occupational origin, Allergic disease of the occupational origin as well as issues working environment: environmental and professional monitoring.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	basis rules of prevention, rules of conduct in the case of occupational exposure on dangerous and harmful factors	E.W32	test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	test
W3	symptoms and course of diseases	O.W2	test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	test
U2	carry out a medical history with an adult patient	E.U1	test
U3	conduct a full and targeted physical examination of an adult patient	E.U3	test
U4	maintain patient's medical records	E.U38	test
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	test
K2	use objective sources of information	O.K7	test
K3	promote health-promoting behaviors	O.K6	test
K4	respect medical confidentiality and patients' rights	O.K3	test
K5	to be guided by the well-being of a patient	O.K2	test
K6	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures	O.K1	test

Calculation of ECTS points

Activity form	**Activity hours***
classes	4
seminar	8
e-learning	6
preparation for classes	10
Student workload	**Hours** 28
Workload involving teacher	**Hours** 18
Practical workload	**Hours** 4

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Defining occupational disease and the base of recognition (the legal and medical aspects)	W1, U1, K1	classes, seminar
2.	Diseases pseudo-professional	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
3.	Epidemiology of occupational diseases	W3, U1, U2, U3, U4, K1	classes, seminar
4.	Pneumoconiosis. Lung diseases caused by hard metals, triggered by man-made fibers. Berylliosis. Byssinoza.	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
5.	Metal fever	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
6.	Diseases caused by the action of physical factors: ionizing radiation, electromagnetic fields, infrasound and ultrasound, high and low temperature, high and reduced atmospheric pressure. Vibration syndrome.	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
7.	Tumors of occupational origin	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
8.	Occupational poisoning by heavy metals (lead, mercury)	W1, W2, W3, U1, K1	classes, seminar, e-learning
9.	Occupational exposure to hydrocarbons	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
10.	Infectious diseases of occupational origin	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar
11.	Allergic occupational origin of the disease: pathogenesis of occupational allergy. Characteristics of occupational allergens. Interview and allergy diagnostics in occupational diseases. Skin tests with allergens professional point and patch. Specific and non-specific provocation tests. Occupational asthma. Allergic alveolitis. COPD. Professional anaphylaxis. Occupational skin diseases, respiratory allergic.	W1, W2, W3, U1, U2, U3, U4, K1, K2, K3, K4, K5, K6	classes, seminar, e-learning
12.	Issues working environment: environmental and professional monitoring.	W1, W2, W3, U1, U2, U3, U4, K1	classes, seminar

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, demonstration, discussion, case study method, group work, lecture

Activities	Examination methods	Credit conditions
classes	test	60% correct answers
seminar	test	60% correct answers
e-learning	test	60% correct answers

Additional info

attendance (limit is a maximum of 1 excused absence)

Entry requirements

Basic knowledge of internal medicine, ENT, dermatology, allergy including symptomatology and diagnosis of diseases of professional background. Knowledge of the pathophysiological processes, including imunology of allergic diseases, intolerance reactions and mechanisms of toxic.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Family Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	credit **Activities and hours** seminar: 17, classes: 15, e-learning: 18	3.0

Periods	**Examination**	**Number of ECTS points**
Semester 11, Semester 12	examination **Activities and hours** clinical classes: 60	4.0

Goals

G1	introduction to principles of family medicine.
G2	introduction to patient-centered model of care
G3	explaining the role of family as a potential source of illness and natural support group
G4	explanation of environmental and epidemiological conditions of most common diseases in family practice
G5	epmhasizing importance of health promotion an disease prevention in family practice including primary, secondary and tertiary prevention
G6	presentation of role of family doctor in health care system and principles of cooperation with medical and non-medical institutions in patient/family health care
G7	introduction to principles of monitoring and improvement of quality of care in family practice
G8	teaching of practical skills in family medicine
G9	systematisation of acquired knowledge
G10	preparation of students for independent work

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	classroom observation, clinical case presentation
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practical skills, classroom observation, clinical case presentation
W3	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	clinical case presentation
W4	environmental and epidemiological determinants of the most frequent diseases	E.W1	clinical case presentation
W5	the principles of nutrition of healthy and sick children, including breastfeeding, preventive vaccination and child health monitoring	E.W2	booklet of practical skills, classroom observation, clinical case presentation

W6	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	E.W3	booklet of practical skills, classroom observation, clinical case presentation
W7	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	classroom observation

W8	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.W7	booklet of practical skills, classroom observation, clinical case presentation
W9	the causes and basic differences in the most common diseases in the elderly and the principles of management in basic geriatric syndromes	E.W9	classroom observation, clinical case presentation
W10	course and symptoms of the aging process and the principles of the overall geriatric assessment and interdisciplinary care for an elderly patient	E.W8	booklet of practical skills, clinical case presentation
W11	the basic principles of pharmacotherapy for diseases in the elderly	E.W10	booklet of practical skills, clinical case presentation
W12	basic principles of organizing care for the elderly and the burden on the carer of the elderly	E.W12	booklet of practical skills, classroom observation, clinical case presentation
W13	environmental and epidemiological determinants of the most frequent human neoplastic diseases	E.W23	clinical case presentation

W14	rules of conduct in the event of the detection of an infectious disease	E.W33	booklet of practical skills, classroom observation, clinical case presentation
W15	basic features, environmental and epidemiological conditions of the most common human skin diseases	E.W35	booklet of practical skills, classroom observation
W16	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases and specific problems in the practice of a family physician	E.W38	booklet of practical skills, clinical case presentation
W17	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	booklet of practical skills
W18	theoretical and practical basics of laboratory diagnostics	E.W40	booklet of practical skills
W19	health effects of systematic physical activity of children and adolescents and physical activity of adults in prevention of selected diseases	E.W44	booklet of practical skills
W20	principles of immunoprophylaxis of infectious diseases	E.W51	booklet of practical skills, classroom observation, clinical case presentation
W21	the specificity of the study in sports medicine, including exercise capacity tests. Knows the rules of medical certification in children, adolescent and adult sportsmen	E.W45	classroom observation
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	booklet of practical skills, classroom observation
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practical skills, classroom observation
U3	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, clinical case presentation
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	carry out a medical history with an adult patient	E.U1	booklet of practical skills, classroom observation
U10	carry out a medical interview with the child and his or her family	E.U2	booklet of practical skills, classroom observation
U11	conduct a full and targeted physical examination of an adult patient	E.U3	booklet of practical skills, classroom observation
U12	carry out a physical examination of a child of all ages	E.U4	booklet of practical skills, classroom observation

U13	conduct an approximate hearing and field of vision examination, and an otoscopic examination	E.U6	booklet of practical skills, classroom observation
U14	compile anthropometric and blood pressure measurements with data on centile grids	E.U9	booklet of practical skills, classroom observation
U15	assess the degree of advancement of puberty	E.U10	booklet of practical skills, classroom observation
U16	conduct routine health checks	E.U11	booklet of practical skills, classroom observation
U17	perform differential diagnosis of the most common diseases of adults and children	E.U12	booklet of practical skills, classroom observation
U18	plan diagnostic, therapeutic and prophylactic procedures	E.U16	booklet of practical skills, classroom observation
U19	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	classroom observation, clinical case presentation
U20	qualify the patient for home and hospital treatment	E.U20	classroom observation, clinical case presentation
U21	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	booklet of practical skills, classroom observation
U22	qualify the patient for vaccination	E.U27	booklet of practical skills, classroom observation
U23	plan specialist consultations	E.U32	booklet of practical skills, classroom observation
U24	maintain patient's medical records	E.U38	classroom observation
U25	understand the importance and organization of support groups for chronic patients and their families, and Balint groups for medical staff	E.U51	classroom observation
U26	qualify children and young people for physical education and sports, and adults for appropriate physical activity. Interprets the stress tests	E.U41	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	booklet of practical skills, classroom observation
K2	to be guided by the well-being of a patient	O.K2	booklet of practical skills, classroom observation
K3	respect medical confidentiality and patients' rights	O.K3	booklet of practical skills, 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	promote health-promoting behaviors	O.K6	booklet of practical skills, classroom observation, clinical case presentation
K6	use objective sources of information	O.K7	classroom observation, clinical case presentation
K7	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

K8	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

Calculation of ECTS points

Semester 7, Semester 8

Activity form	Activity hours*
seminar	17
classes	15
preparation for classes	20
e-learning	18
Student workload	**Hours** 70
Workload involving teacher	**Hours** 50
Practical workload	**Hours** 15

* hour means 45 minutes

Semester 11, Semester 12

Activity form	Activity hours*
clinical classes	60
preparation for classes	30
preparation for examination	20
Student workload	**Hours** 110
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities

1.	Principles of Family Medicine and Model for Comprehensive Medicine	W16, U1, U5, U6, U7, K6	seminar, e-learning, clinical classes
2.	Epidemiology of the Most Common Diseases in the Family Practice	W15, W4	seminar, e-learning, clinical classes
3.	Doctor – Patient Comunication	W16, U7	seminar, e-learning, clinical classes
4.	Systems of Support During Illness	W12, U25	seminar, e-learning, clinical classes
5.	Prevention and Health Promotion	W3, W5, U13, U14, U16, U22, K5	classes, seminar, e-learning, clinical classes
6.	Dependency Behaviors and Addictions	W7	seminar, e-learning
7.	Environmental Determinants of Health and Disease	W4	seminar, e-learning
8.	Diagnostic and Treatment Management	W16, W17, W18, W6, W8, U18, U21, U3	seminar, e-learning, clinical classes
9.	Comunication Techniques	U7	classes, e-learning, clinical classes
10.	The Strategy of Building Doctor-Patient Relationship	U25, U7, K1, K2, K3, K4	classes, e-learning, clinical classes
11.	History Taking – Steps in Family Medicine	U1, U7	classes, e-learning, clinical classes
12.	Acute Ilnesses in Family Medicine	W1, W14, W6, W8, U19, U2	e-learning, clinical classes
13.	The chosen chronic and Civilization dieases	W1, W15, W6, W8, U19	seminar, e-learning, clinical classes
14.	Care for Chronically and Terminally Ill Patients	W2, U20	seminar, e-learning, clinical classes
15.	Family Practice Organization and Quality of Care	U24, U8, K2, K7, K8	seminar, e-learning, clinical classes
16.	Specific Psychological and Clinical Problems of Pediatric, Adult and Senile Population in the Family Medicine Practice and the Methods of Solving Them.	W10, W11, W12, W16, W19, W20, W21, W5, W6, W7, W9, U10, U11, U12, U15, U17, U23, U26, U4, U9	seminar, e-learning, clinical classes
17.	Prophylaxis, Diagnosis of Oncological and Civilization Diseases.	W13, W4	seminar, e-learning, clinical classes
18.	Family Abuse.	W7	seminar, e-learning, clinical classes
19.	Family Medicine Care After Patient Hospitalization	U20	seminar, e-learning, clinical classes

Course advanced

Semester 7, Semester 8

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, discussion, e-learning, educational film, case study method, situation method, group work, assignments solving, seminar, simulation, simulated patient, virtual patient

Activities	Examination methods	Credit conditions
seminar	classroom observation	Completion of module requires meeting the following conditions during seminars: 1. attendance in all seminars is needed to have a credit 2. activity in classes 3. attitude and conduct
classes	classroom observation	Completion of module requires meeting the following conditions during seminars: 1. attendance in all seminars is needed to have a credit 2. activity in classes 3. attitude and conduct
e-learning	classroom observation, clinical case presentation	

Semester 11, Semester 12

Teaching methods:

clinical classes, practical classes

Activities	Examination methods	Credit conditions
clinical classes	booklet of practical skills, classroom observation, clinical case presentation	Students are assessed based on attendance and participation in classes, obtaining skills is confirmed in the book called “Booklet of practical skills” Module passing requires fulfilling the following conditions: 1. attendance in classes 2. active participation in classes 3. presentation of two clinical cases 4. passing the final test exam

Additional info

The students are obliged to familiarize themselves with the literature recommeded before the classes.

Entry requirements

Knowledge in: epidemiology, sociology, microbiology, psychology, laboratory diagnostics, pharmacology. To start second part of the subject on 6th year the following credits are obligatory: family medicine part 1 (4th year), leading subjects and all other subjects, which are continued from previous years (internal diseases, pediatics, family medicine, psychiatry, surgery, obstretrics and gynecology, emergency medicine). Presence at all classes is obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Neurology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** C. Preclinical course, E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	examination **Activities and hours** e-learning: 10, seminar: 34, classes: 46	7.0

Goals

C1	1. The ability of taking medical history and performing neurological examination allowing to identify life-threatening conditions and to make decisions about preliminary diagnosis of the patient's symptoms.
C2	2. Gaining knowledge about frequent and important (from epidemiological and social point of view) diseases of the nervous system.
C3	3. Gaining knowledge about neurological terminology, methods used for diagnosing nervous system disorders and treatment of chronic neurological diseases, which will allow future collaboration with a neurologist.
C4	4. Gaining experience in contact with patients with nervous system disorders.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	E.W14	test, oral credit
Skills – Student can:			
U1	carry out a medical history with an adult patient	E.U1	classroom observation
U2	conduct a full and targeted physical examination of an adult patient	E.U3	classroom observation
U3	assess the general condition, state of consciousness and awareness of the patient	E.U7	classroom observation, oral credit
U4	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, oral credit
U5	recognize immediate life-threatening conditions	E.U14	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	use objective sources of information	O.K7	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	10
seminar	34
classes	46
preparation for classes	40
preparation for classes	40
preparation for examination	40

Student workload	**Hours** 210
Workload involving teacher	**Hours** 90
Practical workload	**Hours** 46

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Nervous system disorders	W1	e-learning
2.	Stroke	W1	e-learning
3.	Alzheimer's disease and other causes of dementia	W1	e-learning
4.	Parkinson's disease and other extrapyramidal system disorders	W1	e-learning
5.	Pain in neurology	W1	e-learning
6.	Bedside teaching	U1, U2, U3, U4, U5, K1, K2, K3	classes
7.	Patophysiology of the motor system.	W1	seminar
8.	Patophysiology of the sensory nervous system. Cranial nerves.	W1	seminar
9.	Auxiliary tests in neurology - part I	W1	seminar
10.	Auxiliary tests in neurology - part II	W1	seminar
11.	Disorders of consciousness and higher brain functions	W1	seminar
12.	Multiple sclerosis	W1	seminar
13.	Epilepsy	W1	seminar
14.	Neuropathies	W1	seminar
15.	Neuromuscular disorders	W1	seminar
16.	Neurological symptoms in internal medicine	W1	seminar
17.	Neuroinfections	W1	seminar
18.	Sleep disorders. Autonomic system disorders.	W1	seminar
19.	Cerebellum and spinal cord disorders. Vertigo.	W1	seminar
20.	Life-threatening conditions in neurology	W1	seminar
21.	Neuropathology	W1	seminar
22.	Involuntary movements	W1	seminar

Course advanced

Teaching methods:

case study, clinical classes, discussion, e-learning, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	test	mandatory attendance, preparation for classes, active participation in classes
seminar	test	mandatory attendance, preparation for classes, active participation in classes
classes	classroom observation, test, oral credit	mandatory attendance, preparation for classes, active participation in classes

Additional info

Entry requirements

Passed course in Pharmacology and Radiology.
Neurology exam can be attended with passed exams in Pharmacology and Radiology.
Attending classes is obligatory.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Ophthalmology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	examination **Activities and hours** e-learning: 20, classes: 40	4.0

Goals

C1	The aim of education is to acquire knowledge about and the ability to recognize eye diseases, provide first aid in the case of eye injuries, recognize symptoms that require immediate specialist assistance, as well as the selection of diagnostic tests and interpretation of the results of ophthalmologic consultations.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	written examination, practical colloquiums
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written examination, practical colloquiums

W3	issues related to diseases of the visual system, in particular: 1) the causes, symptoms, principles of diagnosis and therapeutic management of the most common ophthalmic diseases, 2) ophthalmic complications of systemic diseases and their ophthalmic symptomatology, and correct methods of dealing with these cases, 3) surgical management of specific eye diseases, 4) the main groups of drugs used in ophthalmology, their adverse reactions and interactions, 5) the groups of generally used medicines with complications and ophthalmic contraindications and their mechanism	F.W11	written examination, practical colloquiums
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	written examination, practical colloquiums
U2	perform ophthalmic screening tests	F.U19	written examination, practical colloquiums
U3	recognize ophthalmologic conditions requiring immediate specialist help and provide preliminary, qualified help in cases of physical and chemical injuries of the eye	F.U20	written examination, practical colloquiums
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	practical colloquiums
K2	respect medical confidentiality and patients' rights	O.K3	practical colloquiums
K3	to be guided by the well-being of a patient	O.K2	practical colloquiums
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	practical colloquiums
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	practical colloquiums
K6	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	practical colloquiums
K7	formulate conclusions from own measurements or observations	O.K8	practical colloquiums

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	20
classes	40
preparation for classes	20
preparation for examination	25

practice	15

Student workload	**Hours** 120
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 55

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Lectures are primarily of an informative nature, although the lecturer can also conduct lectures in an interactive form, engaging students in the discussed problem based on previously acquired knowledge; e.g. news on the anatomy and physiology of the eye. During lectures, basic eye diseases are discussed, manifested as "Red eye", diseases that cause sudden deterioration of vision ("acute ophthalmologic conditions"), and chronic ophthalmologic conditions that cause vision loss (cataracts, glaucoma, retinal and macular diseases, uveitis). The topics of lectures also include discussion of ophthalmic conditions associated with systemic diseases (e.g. diabetes, uveitis, Lyme disease) that require interdisciplinary management. Clinical division, diagnostics and treatment of strabismus, as well as issues related to neuroscience are also presented.	W1, W2	classes, e-learning
2.	Classes are interactive, clinical case analysis is conducted during classes, and a didactic discussion on the discussed problem is conducted.	W3	classes
3.	Exercises: Understanding the most important diagnostic methods of the visual system (visual acuity assessment, refractive defect test, tonometry, anterior segment and fundus examination), including imaging (USG, OCT, fluorescein angiography, angio-OCT). Demonstration of patients with various ophthalmic diseases; collecting ophthalmic history, assessing the anterior segment of the eyeball in the slit lamp and the fundus using an ophthalmic speculum.Knowledge of recognition and management of ophthalmic emergencies, ability to provide first ophthalmic aid (conjunctival sac rinsing, inversion of eyelids, removal of foreign bodies from the conjunctival sac), learning to apply ointments, drops into the conjunctival sac and putting on an eye dressing in outpatient and / or hospitalized patients in the Ward. Students during practical classes have the opportunity to observe ophthalmic procedures "live" directly in the operating room or via multimedia in the lecture room.	U1, U2, U3, K1, K2, K3, K4, K5, K6, K7	classes

Course advanced

Teaching methods:

case study, classes / practicals, clinical classes, discussion, e-learning, educational film, group work, seminar, lecture, practical classes

Activities	Examination methods	Credit conditions
e-learning	written examination	The exam in the form of a multiple-choice test, consisting of 35 questions. A condition for admission to the theoretical exam in ophthalmologyis attendance at all seminars and exercises and obtaining credit for practical classes (passed practical exam) at the assistant training subgroup.
classes	practical colloquiums	Checking the skills of visual acuity testing using Snellen charts, assessment of the anterior segment of the eyeball in the slit lamp, basics of fundus examination, conjunctival sac flushing,placing the drops into the conjunctival sac, inverting the eyelids.

Entry requirements

Anatomy and physiology of the eye.

Medical Law and Medical Deontology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** G. Law and organizational aspects of medicine

Periods Semester 7, Semester 8	**Examination** graded credit **Activities and hours** seminar: 25	**Number of ECTS points** 2.0

Goals

C1	Presentation of legal and ethical background of physician's work

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	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	written examination, classroom observation

W2	the concept of public health, its objectives, tasks and the structure and organization of the health care system at the national and global level, as well as the impact of economic conditions on the health protection options	G.W4	written examination, classroom observation
W3	legal regulations concerning the provision of health services, patient's rights, grounds for practicing the profession of doctor and functioning of medical self-government	G.W5	written examination, classroom observation
W4	basic legal regulations regarding the organization and financing of health care, general health insurance and the principles of organization of units performing medical activities	G.W6	written examination, classroom observation
W5	legal obligations of the doctor concerning pronouncement of death	G.W7	written examination, classroom observation
W6	legal regulations and basic methods of medical experimentation and other medical research, including basic methods of data analysis	G.W8	written examination, classroom observation
W7	legal regulations concerning transplantation, artificial procreation, abortion, aesthetic procedures, palliative treatment, mental illness, etc.	G.W9	written examination, classroom observation
W8	legal regulations concerning medical confidentiality, keeping medical records, criminal, civil and professional liability of a doctor	G.W11	written examination, classroom observation
W9	situations in which there are conflicts between values and principles relating to the medical profession and the provision of health services, and provide a justification for the decisions taken	G.W19	written examination, classroom observation
W10	principles of pharmaceutical law	G.W10	written examination, classroom observation
Skills – Student can:			
U1	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	written examination, classroom observation
U2	explain basic rights and the legal basis for the provision of medical services to recipients of medical services	G.U5	written examination, classroom observation
U3	cooperate with other professions in the field of health protection	G.U10	written examination, classroom observation
U4	identify the relevant legislation containing standards for the provision of health services and the medical profession	G.U11	written examination, classroom observation
U5	apply legal regulations regarding the issue of medical certificates for the needs of patients, their families and other entities	G.U6	written examination, 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	written examination, classroom observation
K2	to be guided by the well-being of a patient	O.K2	written examination, classroom observation

K3	respect medical confidentiality and patients' rights	O.K3	written examination, 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	written examination, classroom observation
K5	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	written examination, classroom observation
K6	formulate opinions on the various aspects of the professional activity	O.K10	written examination, classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
seminar	25
preparation for classes	10
information collection	5
preparation for examination	10
Student workload	**Hours** 50
Workload involving teacher	**Hours** 25

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Organizacja systemu ochrony zdrowia i udzielania świadczeń zdrowotnych – podmioty wykonujące działalność leczniczą, ich status i organizacja, indywidualne i grupowe praktyki lekarskie, zasady prowadzenia działalności leczniczej, system ratownictwa medycznego.	W1, W10, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, K1, K2, K3, K4, K5, K6	seminar

Course advanced

Teaching methods:

discussion, e-learning, problem solving method, case study method, presentation, seminar, lecture with multimedia presentation

Activities	**Examination methods**	**Credit conditions**
seminar	written examination, classroom observation	attendance, written exam - 10 open questions

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Propedeutics of Dentistry

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** seminar: 15	1.0

Goals

G1	Transfer of basic knowledge about dentistry and its specialties
G2	Acquainting students with selected facts on embryology, anatomy and physiology of craniofacial complex
G3	Familiarizing students with the principles of prevention of dental diseases
G4	Explanation of the relationship between periodontal disease and general health
G5	Presentation of oral manifestations of selected systemic diseases
G6	Making students aware of the importance of saliva in health and disease
G7	Presentation of facts and figures about oral cancer
G8	Making students aware of the importance of oral cancer prevention and early detection of oral potentially malignant disorders
G9	Familiarizing students with the problem of orofacial pain, its potential causes and difficulties in diagnosis and treatment

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	classroom observation, oral answer
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, oral answer
W3	development, structure and functions of the human body in normal and pathological conditions	O.W1	classroom observation, oral answer
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, oral answer
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, oral answer
U3	identify medical problems and prioritize medical management	O.U1	classroom observation, oral answer
Social competences – Student is ready to:			
K1	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, oral answer
K2	promote health-promoting behaviors	O.K6	classroom observation, oral answer
K3	formulate conclusions from own measurements or observations	O.K8	classroom observation, oral answer
K4	use objective sources of information	O.K7	classroom observation, oral answer

Calculation of ECTS points

Activity form	Activity hours*
seminar	15
preparation for classes	5
preparation for classes	10

Student workload	**Hours** 30
Workload involving teacher	**Hours** 15

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	General knowledge about dentistry and its specialities Selected facts on embryology, anatomy and physiology of craniofacial complex	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
2.	Prevention of dental diseases	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
3.	Dentistry and internal medicine: from the focal infection theory to the periodontal medicine concept	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
4.	Oral manifestations of systemic diseases	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
5.	Saliva: physiology and diagnostic potential	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
6.	Prevention of oral cancer	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
7.	Oral potentially malignant disorders	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar
8.	Orofacial pain	W1, W2, W3, U1, U2, U3, K1, K2, K3, K4	seminar

Course advanced

Teaching methods:

discussion, case study method, presentation, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation, oral answer	Presence at all classes

Additional info

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Psychotherapy

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** seminar: 6, classes: 14	1.0

Goals

C1	Ability to maintain therapeutic contact with psychiatric patient.
C2	Ability to basic clinical decisions making and treatment qualification of patients especially regarding psychotherapy.
C3	Advisory competencies regarding choice or verification of psychotherapy related influences (e.g. counselling, support).

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, multiple choice test
W2	symptoms, principles of diagnosis and therapeutic management in the most frequent mental disorders, including 1) schizophrenia, 2) affective disorders, 3) neurotic and adaptive disorders, 4) nutritional disorders, 5) disturbances related to the intake of psychoactive substances, 6) sleep disorders	E.W17	classroom observation, multiple choice test
W3	the specificity of mental disorders and their treatment in children, adolescents and in old age	E.W19	multiple choice test
W4	symptoms of mental disorders in the course of somatic diseases, their influence on the course of the basic disease and prognosis and the principles of their treatment	E.W20	multiple choice test
W5	the problem of human sexuality and fundamental disorders associated with it	E.W21	classroom observation, multiple choice test
W6	basic psychotherapeutic techniques and principles for combining psychotherapy and pharmacotherapy	E.W58	classroom observation, multiple choice test
W7	principles of implementing psychotherapeutic dialog and types of therapeutic interventions	E.W57	classroom observation, multiple choice test
W8	understands the symptoms, understands the etiology, treatment rules and is able to establish therapeutic contact with patients with the most common disorders: a) anxiety, somatic and other neurotic forms b) post-traumatic disorders c) personality and behavioral disorders of adults	E.W56	classroom observation, multiple choice test
W9	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	classroom observation, multiple choice test
Skills – Student can:			
U1	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, multiple choice test
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation
U3	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	multiple choice test
U4	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, multiple choice test
U5	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, multiple choice test
U6	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, multiple choice test
U7	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation, multiple choice test
U8	identify medical problems and prioritize medical management	O.U1	classroom observation, multiple choice test
U9	carry out a medical history with an adult patient	E.U1	classroom observation, multiple choice test

U10	conduct a psychiatric examination	E.U5	classroom observation, multiple choice test
U11	evaluate and describe the somatic and mental state of the patient	E.U13	classroom observation, multiple choice test
U12	recognize immediate life-threatening conditions	E.U14	classroom observation, multiple choice test
U13	qualify the patient for home and hospital treatment	E.U20	classroom observation, multiple choice test
U14	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	classroom observation, multiple choice test
U15	recognize the symptoms of drug dependence and propose treatment	E.U19	classroom observation, multiple choice test
U16	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	classroom observation
U17	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, multiple choice test
U18	perform differential diagnosis of the most common diseases of adults and children	E.U12	classroom observation, multiple choice test
U19	plan specialist consultations	E.U32	classroom observation, multiple choice test
U20	interpret pharmaceutical characteristics of medicinal products and critically assess advertising materials for medicines	E.U31	classroom observation
U21	maintain patient's medical records	E.U38	multiple choice test
U22	negotiate patient referral for psychotherapy and empathic patient support during a crisis	E.U50	classroom observation, multiple choice test
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, multiple choice test
K2	to be guided by the well-being of a patient	O.K2	classroom observation, multiple choice test
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, multiple choice test
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, multiple choice test
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
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, multiple choice test
K10	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation, multiple choice test
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, multiple choice test

Calculation of ECTS points

Activity form	Activity hours*
seminar	6
classes	14
preparation for classes	5
preparation for examination	5

Student workload	**Hours** 30
Workload involving teacher	**Hours** 20
Practical workload	**Hours** 14

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Psychotherapy combined with pharmacotherapy	W1, W2, W3, W4, W5, W6, U1, U11, U12, U15, U16, U17, U20, U21, U5, U7, U8, K1, K2, K4, K5, K7, K8, K9	seminar
2.	Neurobiology and psychotherapy	W1, W2, W3, W4, W6, W8, U11, U15, U16, U2, U20, U5, U8, K5, K7	seminar
3.	Psychodynamic etiology of psychiatric disorders treated with psychotherapy	W2, W5, W8, U10, U5, U9, K7, K8	seminar
4.	Psychotherapy effectiveness	W1, W2, W3, W4, W5, W6, W8, W9, U1, U13, U15, U16, U17, U2, U4, U5, K10, K2, K5, K7, K8	seminar

5.	Contact, psychotherapeutic relationship, nonspecific and specific curative factors in psychotherapy process	W1, W2, W3, W4, W5, W6, W7, U1, U10, U11, U12, U15, U17, U22, U3, U4, U9, K1, K10, K2, K3, K4, K5, K8, K9	classes
6.	Psychotherapy versus psychological help	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U16, U17, U2, U22, U3, U4, U5, U9, K1, K2, K3, K4, K5, K8, K9	classes
7.	Curative and „developmental" understanding of psychotherapy	W1, W2, W3, W5, W6, W7, W8, U1, U10, U11, U12, U14, U17, U18, U2, U22, U3, U4, U9, K1, K10, K2, K3, K4, K5, K6, K7, K9	classes
8.	Elements of psychotherapy in every medical action	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U15, U19, U2, U21, U22, U3, U4, U7, U8, U9, K1, K2, K4, K5, K6, K8, K9	classes
9.	Behavioral rules when in dialogue (basic rules of intervening for doctors, psychotherapists)	W1, W2, W3, W5, W6, W7, W8, U10, U11, U12, U22, U3, U9, K1, K5	classes
10.	Assumptions and rules of psychoanalytic psychotherapy, behavioral, cognitive, systemic	W1, W2, W3, W6, W7, W8, U1, U22, U5, K1, K10, K5, K7	classes
11.	Qualification for psychotherapy	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U13, U14, U15, U16, U17, U19, U22, U3, U5, U6, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes
12.	Range, indications for short-term and long-term psychotherapy	W1, W2, W3, W4, W5, W6, W7, W8, U1, U13, U14, U16, U17, U22, U5, U7, K2, K4, K7, K8	classes
13.	Rules of work focused on symptoms, insight-oriented work focused on background, inclusion of biographical data	W1, W2, W3, W4, W5, W6, W7, W8, U1, U10, U11, U16, U17, U18, U22, U3, U6, U9, K1, K11, K2, K4, K8, K9	classes
14.	Psychotherapist's work in group. Influencing therapy group' dynamics and knowing specific and nonspecific curative factors in group psychotherapy process	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U11, U13, U14, U16, U17, U2, U22, U3, U4, U7, K1, K10, K11, K2, K3, K4, K5, K8, K9	classes
15.	Learning psychotherapeutic techniques e.g. hypnosis, psychodrama, psychotherapeutic drawing, guided imagery, music therapy etc.	W1, W2, W3, W4, W5, W6, W8, W9, U1, U14, U15, U17, U2, U3, U5, U6, K1, K10, K2, K4, K5, K7, K9	classes

16.	Application of psychotherapeutic influences in various sectors of medicine and in rehabilitation and with patients with various disorders	W1, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U14, U15, U16, U17, U18, U2, U21, U22, U3, U4, U5, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, classes in simulated conditions, demonstration, discussion, staging, problem solving method, case study method, situation method, group work, seminar, simulation

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Test exam is combined with test exam regarding exercises.
classes	classroom observation, multiple choice test	Practicals credited by Chair and Dept assistants based on skills, knowledge and active participation. Test exam consisted of 20 multiple choice questions (60% correct answers is required)

Entry requirements

Presence is obligatory (5 of 5 days with all exercises/classes and seminars. Any exceptions are to be discussed with course Coordinator.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Public Health

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** G. Law and organizational aspects of medicine
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 7, Semester 8	graded credit **Activities and hours** seminar: 15	1.0

Goals

C1	- to provide students with the role and tasks of public health in Poland and worldwide
C2	-to teach health determinants and methods of population diagnosis made for the public health needs
C3	-to provide knowledge about health promotion and disease prevention, contributing factors and realization possibilities
C4	-to teach students economic determinants of public health
C5	-to present health care models and organization rules at different levels of public health

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	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	classroom observation, oral answer, essay, assignment report, test, written credit
W2	the concept of public health, its objectives, tasks and the structure and organization of the health care system at the national and global level, as well as the impact of economic conditions on the health protection options	G.W4	classroom observation, oral answer, test, written credit
W3	methods of individual and population health assessment, different systems of disease classification and medical procedures	G.W1	group assessment, oral answer, test, written credit
W4	basic legal regulations regarding the organization and financing of health care, general health insurance and the principles of organization of units performing medical activities	G.W6	group assessment, oral answer, test, written credit
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation, group assessment
U2	collect information on the presence of risk factors for communicable and chronic diseases and plan prevention activities at different levels of prevention	G.U2	classroom observation, group assessment, oral answer, essay, assignment report
U3	interpret the measures of the incidence of diseases and disabilities	G.U3	classroom observation, group assessment, oral answer, assignment report, test, written credit
U4	cooperate with other professions in the field of health protection	G.U10	classroom observation, group assessment, oral answer, essay, assignment report
U5	identify the relevant legislation containing standards for the provision of health services and the medical profession	G.U11	classroom observation, group assessment, essay, assignment report
Social competences – Student is ready to:			
K1	promote health-promoting behaviors	O.K6	classroom observation, group assessment
K2	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, group assessment
K3	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation, group assessment, oral answer

Calculation of ECTS points

Activity form	Activity hours*

seminar	15
preparation for classes	5
consultations with lecturer	2
preparation for examination	8

Student workload	**Hours** 30
Workload involving teacher	**Hours** 15

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Purposes and tasks of public health. Public health functions. New measures of population health. International Classification of Diseases and other classifications.	W2, W3, U1, U3, K3	seminar
2.	Health promotion and disease prevention strategies used in public health. Determinants of health over years. Social determinants of health. Levels of prevention. The role of mass screening.	W1, U1, U2, U4, K1, K2	seminar
3.	Health care models in Poland and worldwide. Economic determinants of public health. Financial models. Direct and indirect costs in public health.	W2, U1, K3	seminar
4.	The role of public health in the overall concept of population health. Law foundations for public health functions. Public health insurance. Patient from the public health point of view. Basics of organizations of health care institutions.	W2, W4, U1, U4, U5, K2, K3	seminar
5.	Public health programs. Knowledge exchange in public health. Public health in XXI century and public health challenges.	W1, W2, W4, U1, U4, K1, K2, K3	seminar

Course advanced

Teaching methods:

brainstorm, discussion, problem solving method, presentation, group work, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	classroom observation, group assessment, oral answer, essay, assignment report, test, written credit	The first term final exam is a MCQ test, 30 questions. The second term final exam is dated on the exam sessions for re-takers and consists of 4 (four) open questions. Answers for each question are scored from 0 to 5 points (with intervals of 0.5 pts). The criterion to pass for each term of the final exam >=60%. The final grade scheme: 60,0% do 68,0% = 3.0; >68,0% - 76,0% = 3.5; >76,0% do 84,0% = 4.0; >84,0% do 92,0% = 4.5 >92,0% do 100% = 5.0

Additional info

To be allowed to take the final exam student should fulfill the attendance criterion, meaning he/she should attend and actively participate in all of scheduled meetings (or make up for absence after the acceptance of the teacher responsible for the meeting). If the criterion is not fulfilled student is not allowed to take the final exam and consequently the term is lost. Student is obligated to come on time for course meetings. 2 lateness are allowed without punishment, otherwise student is committed to make up for one of the topic she/he has been late, the topic is drawn by the teacher.

Entry requirements

Attendance on the course in obligatory. To be allowed to participate in the course student should pass an epidemiology course (or other of this type which covered the required teaching effects as described under O.W4-5; G.W1-3,8; O.U5-6,8-9; G.U1-4; O.K6-8 in teaching effects).

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Surgery - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 8	credit **Activities and hours** professional practice: 60	2.0

Goals

C1	1. get acquainted with organization of surgical ward (admission room, operating theatre, wound dressing rooms, principles of admission, medical records keeping and discharge procedures); 2. become familiar with types of surgical tools and apparatuses used in a surgical ward; 3. develop medical examination and diagnostic skills, particularly in emergencies; 4. learn wound sewing and dressing, procedures applied in case of fractures and burns; 5. learn principles and methods of local anesthesia;

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	booklet of practice
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice

Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	booklet of practical skills, booklet of practice
U2	plan the diagnostic procedure and interpret its results	O.U3	booklet of practical skills, booklet of practice
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	booklet of practice
K2	to be guided by the well-being of a patient	O.K2	booklet of practice
K3	respect medical confidentiality and patients' rights	O.K3	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	60

Student workload	**Hours** 60
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	participation in rounds and morning reports prepared by on-call physicians; participation in the ward operation, performing basic procedures, change of dressings, suture removal, application of infusion drips, collecting specimens for diagnostic tests; principles of aseptics and antiseptics, as well as pre-surgical scrubbing techniques; participation in performing surgeries in an operating theatre.	W1, W2, U1, U2, K1, K2, K3	professional practice

Course advanced

Teaching methods:

professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practical skills, booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC SME Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Additional info

2 weeks 60 h (5 days/week, 6 h/day); can be completed over summer vacation months only (July - August).
During that time, student must complete four on-call duties between 2 pm and 8 pm (two at each of the wards). Active interns are excused from presence in the obligatory activities before 2 pm on the on-call day.
Excused absence can be granted to the active intern only on submitting formal medical certificate. Illness longer than one week causes internship to be lengthened by the time of absence.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Pediatrics - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2023/24
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 8	credit **Activities and hours** professional practice: 60	2.0

Goals

C1	The purpose of pediatric practice is to consolidate and improve practical skills acquired during the basic course of pediatrics

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	booklet of practice
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practice
U3	plan the diagnostic procedure and interpret its results	O.U3	booklet of practice

U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	booklet of practice
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	booklet of practice
K2	to be guided by the well-being of a patient	O.K2	booklet of practice
K3	respect medical confidentiality and patients' rights	O.K3	booklet of practice
K4	formulate conclusions from own measurements or observations	O.K8	booklet of practice
K5	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	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	60

Student workload	**Hours** 60
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	During clerkship, student should: In the PEDIATRIC part: 1. Learn organization of pediatric ward/department and organizational links between the ward/department and the outpatient health care system; learning basic procedures used at the ward and staff competence in terms of: childcare, examinations and diagnostics (with particular emphasis on: admission, stay and discharge record keeping, medical records keeping); 2. learn sanitary and epidemiological regulations at neonatal and pediatric wards, and the methods of preventing hospital infections; 3. participate in morning rounds and learn principles of patient record keeping; participate in the training courses held by the ward; 4. practice assessment of a child's condition and psycho-physical development; improve pediatric physical examination skills; 5. learn infant care; learn about nutrition of healthy and sick infants and children; 6. learn principles of pediatric emergency medicine; 7. practice diagnosing and differentiation of basic disease entities, with special consideration to acute cases; 8. practice interpretation of laboratory, radiological and pathomorphological test and examination results; 9. practice assessment of infants' hydration status and determining indications for hydration treatment (amount and composition of the infusion fluid); 10. practice assessment of acid-base equilibrium in sick children, particularly infants; 11. perform supervised medical procedures such as: application of drip infusion, and injections; 12. participate in multi-specialist consultations; 13. demonstrate a professional and diligent approach to the entrusted tasks. Basic skills: student: 1. observes the aseptic and antiseptics principles, and cares for outward appearance (e.g. name tag, clean and pressed lab coat, change of footwear); 2. In medical history taking: collects information on ailments and general complaints, collects medical history, family medical history. In physical examination: carries out detailed physical examination, general health assessment, assessment of somatic and psychophysical development; 3. recognizes causes of basic illnesses, differentiates basic symptoms of the most common illnesses; 4. differentiates basic disease classifications, with particular emphasis on emergencies. Is capable of assessing basic life threatening conditions in pediatrics; 5. assesses child's nutrition and hydration status, knows recommendations for hydration treatment. Proposes treatment and diet plan for the pediatric patient; 6. offers early and final diagnoses; 7. monitors and analyses the following results: blood pressure, pulse, temperature; 8. monitors vital signs (cardiac monitor, oximeter, blood glucose); 9. is familiar with: vaccination schedule, rules in well-child checkups, basic infectious diseases in children, basic metabolic diseases in children. Basic diagnostic skills: student: 1. orders, plans and analyzes the course of diagnostic tests: medical imaging, laboratory tests: electrocardiography, pathomorphologic tests etc. Student tries to interpret test results; 2. is familiar with the principles of collecting and securing diagnostic material (blood, urine, fluids, stomach/duodenal matter, smears); 3. is familiar with the principles and indications for injections and needle insertions, and performs them; 4. orders and carries out basic procedures and treatments (oxygen therapy, endotracheal intubation, urinary catheterization, enema/lower gastrointestinal series); 5. participates in: transfusion of blood products, administers medicines/fluids via intravenous therapy. Social skills and commitment: student: 1. is punctual and dedicated; 2. carries out the tasks with diligence; 3. uses medical terminology competently; 4. presents and discusses cases; 5. establishes rapport with patients and their families, as well as the ward staff members; 6. efficiently manages his/her work; 7. shows empathy and observes the code of ethics.	U1, U2, U3, U4, K1, K2, K3, K4, K5	professional practice

Course advanced

Teaching methods:

practical classes

Activities	Examination methods	Credit conditions
professional practice	booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the Certificate of Summer Clerkship Completion (provided by the JU MC SME). The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Entry requirements

Completing pediatric course included in the fourth year of the study

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Clinical Pharmacology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods Semester 9, Semester 10	**Examination** graded credit **Activities and hours** seminar: 12	**Number of ECTS points** 1.0

Goals

C1	Pharmacology of pain
C2	Drugs for the prevention and treatment of thromboembolic disorders
C3	Pharmacology of emergency
C4	Pharmacologic management of depression
C5	Selected aspects of drug toxicology
C6	Heterogeneity of drug response – individualization of therapy. Pediatric and geriatric pharmacotherapy. Most common drug interaction and side effects. Elements of drug toxicology.
C7	Immunopharmacology.
C8	Pharmacogenetics. Gene therapy.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the basic principles of pharmacotherapy for diseases in the elderly	E.W10	classroom observation
W2	principles for the treatment of pain, including cancer and chronic pain	E.W29	classroom observation
W3	principles for palliative treatment of terminal patient	E.W28	classroom observation
W4	indications for the implementation of monitored therapy	E.W42	classroom observation
W5	basic pharmacoeconomic concepts	E.W43	classroom observation
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	classroom observation
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation
U4	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation
U5	inspire the learning process of others	O.U6	classroom observation
U6	monitor the condition of a patient poisoned with chemicals or drugs E.U35. assess bedsores and apply appropriate dressings	E.U34	classroom observation
U7	recognize the condition after drinking alcohol, after using drugs and other substances	E.U15	classroom observation
U8	recognize the symptoms of drug dependence and propose treatment	E.U19	classroom observation
U9	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	classroom observation
U10	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	classroom observation
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	classroom observation
K2	promote health-promoting behaviors	O.K6	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
seminar	12

case analysis	18

Student workload	**Hours** 30
Workload involving teacher	**Hours** 12
Practical workload	**Hours** 18

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Pharmacology of pain Drugs for the prevention and treatment of thromboembolic disorders Pharmacology of emergency	W4, W5, U1, U10, U2, U3, U4, U9, K1	seminar
2.	Pharmacologic management of depression Selected aspects of drug toxicology	W2, W3, W4, W5, U1, U10, U2, U3, U4, U5, U6, U7, U8, K1	seminar
3.	Heterogeneity of drug response – individualization of therapy. Pediatric and geriatric pharmacotherapy. Most common drug interaction and side effects. Elements of drug toxicology.	W4, W5, U10, U6, U7, U8, K1	seminar
4.	Immunopharmacology Pharmacogenetics. Gene therapy.	W1, W5, U10, U3, U9, K1, K2	seminar

Course advanced

Teaching methods:

case study, brainstorm, discussion, seminar, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
seminar	classroom observation	attendance

Entry requirements

subject of pharmacology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Infectious Diseases

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** C. Preclinical course, E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	examination **Activities and hours** e-learning: 26, seminar: 27, classes: 17	4.0

Goals

C1	To acquaint students with etiopathogenesis, epidemiology, clinical picture and treatment of selected infectious diseases
C2	Acquaintance with the principles of preventing and treating infectious diseases occurring sporadically and epidemically.
C3	Acquaintance with the principles of infection prevention and safe work with highly contagious patients

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	symptoms and course of diseases	O.W2	multiple choice test, oral credit
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	multiple choice test, oral credit
W3	environmental and epidemiological determinants of the most frequent diseases	E.W1	multiple choice test, oral credit
W4	rules of conduct in the event of the detection of an infectious disease	E.W33	multiple choice test, oral credit
W5	basis rules of prevention, rules of conduct in the case of occupational exposure on dangerous and harmful factors	E.W32	multiple choice test, oral credit
W6	causes, symptoms, principles of diagnosis, therapeutic and prophylactic management in the most common bacterial, viral, parasitic and fungal diseases, including pneumococcal infections, viral hepatitis, acquired immunodeficiency syndrome (AIDS), sepsis and hospital infections	E.W34	multiple choice test, oral credit
W7	epidemiological problems of infectious diseases in the world and in Poland	E.W48	multiple choice test, oral credit
W8	causes and symptoms a) HIV infection and acquired immune deficiency syndrome b) hepatotropic virus infections with HAV, HBV, HCV, HCV c) tick-borne diseases d) zoonoses e) anaerobic infections f) organ mycoses g) infectious diseases of childhood h) fever of unknown origin i) sepsis and septic shock j) infectious diseases of the central nervous system k) tetanus and botulism l) selected tropical diseases m) acute gastrointestinal infections n) influenza and SARS	E.W49	multiple choice test, oral credit
W9	Symptoms and rules for managing infectious diseases that are life-threatening	E.W50	multiple choice test, oral credit
W10	principles of immunoprophylaxis of infectious diseases	E.W51	multiple choice test, oral credit
W11	principles of diagnostics of infectious diseases and can interpret the results	E.W52	multiple choice test, oral credit
W12	basics of therapy of selected infectious diseases a) antibiotic therapy of selected bacterial infections b) use of antiretroviral drugs in HIV c) treatment of chronic hepatitis B and C d) the use of antiviral drugs in selected clinical situations	E.W53	multiple choice test, oral credit
W13	indications and rules for performing lumbar puncture and assisting in the performance of the procedure	E.W54	multiple choice test, oral credit
W14	the indications and rules for performing liver biopsy and assists in performing procedure	E.W55	multiple choice test, oral credit
Skills – Student can:			
U1	identify life-threatening conditions that require immediate medical intervention	O.U2	oral credit
U2	identify medical problems and prioritize medical management	O.U1	oral credit
U3	plan the diagnostic procedure and interpret its results	O.U3	oral credit
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	oral credit

U5	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	oral credit
U6	communicate and share knowledge with colleagues in a team	O.U8	oral credit
U7	critically evaluate the results of scientific research and adequately justify the position	O.U9	oral credit
U8	carry out a medical history with an adult patient	E.U1	oral credit
U9	conduct a full and targeted physical examination of an adult patient	E.U3	oral credit
U10	assess the general condition, state of consciousness and awareness of the patient	E.U7	oral credit
U11	recognize immediate life-threatening conditions	E.U14	oral credit
U12	evaluate and describe the somatic and mental state of the patient	E.U13	oral credit
U13	perform differential diagnosis of the most common diseases of adults and children	E.U12	oral credit
U14	plan diagnostic, therapeutic and prophylactic procedures	E.U16	oral credit
U15	qualify the patient for home and hospital treatment	E.U20	oral credit
U16	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	oral credit
U17	plan the management of exposure to blood-borne infections	E.U26	oral credit
U18	qualify the patient for vaccination	E.U27	oral credit
U19	make smear tests for malaria	E.U49	oral credit
U20	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	oral credit
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	oral credit
K2	respect medical confidentiality and patients' rights	O.K3	oral credit
K3	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	oral credit
K4	promote health-promoting behaviors	O.K6	oral credit
K5	use objective sources of information	O.K7	oral credit
K6	formulate conclusions from own measurements or observations	O.K8	oral credit
K7	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	oral credit

Calculation of ECTS points

Activity form	Activity hours*
e-learning	26
seminar	27
classes	17
preparation for classes	10
preparation for examination	40

Student workload	**Hours** 120
Workload involving teacher	**Hours** 70
Practical workload	**Hours** 17

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Current epidemiological problems of infectious diseases in Poland and in the world.	W1, W3, W4, W7, K4, K5	e-learning
2.	HIV infection / AIDS - opportunistic infections and cancer.	W5, W6, W8, U10, U11, U12, U14, U16, U3, U4, U5, U6, U8, U9, K1, K2, K3, K4, K5, K6, K7	classes, e-learning
3.	Viral hepatitis	W12, W14, W4, W6, W8, U16, U20, U3, U4, U5, U7	classes, seminar
4.	Infectious of central nervous system.	W12, W13, W6, W9, U1, U10, U11, U12, U14, U15, U20, U3, U4, U5, U8, U9	classes, e-learning
5.	Infectious and parasitic diseases of the digestive tract.	W2, W3, W4, U10, U3, U4, U8, U9	classes, seminar
6.	Acute infectious toxicosis - tetanus, botulism.	W10, W8, W9, U1, K1	classes, e-learning
7.	Sepsis.	W10, W11, W6, W9, U1, U14, U15, U16	classes, seminar
8.	Selected tropical and zoonotic diseases	W10, W6, U1, U11, U15, U2, U3, U4, U5, U7	classes, e-learning
9.	Seasonal, pandemic flu, SARS, COVID-19	W10, W4, U1, U10, U11, U2, U3, U4, U8, U9	classes, seminar
10.	Viral infections - CMV, EBV, HSV, VZV.	W11, W4, W6, W7, W8	classes

11.	Immunoprophylaxis in infectious diseases.	W10	classes, seminar
12.	Fever of unknown reason.	W8	classes, seminar
13.	Tick-borne diseases.	W10, W8, U10, U11, U12, U13, U14, U15, U16, U7, U8, U9, K4, K5	classes, seminar
14.	Infectious diseases of childhood.	W6, W8	classes, seminar
15.	Bioterrorism and biological defense.	W1, W4, W9	classes, seminar
16.	New and reccurent infectious diseases.	W1	seminar
17.	Basics of travel medicine.	U18, U19	classes, seminar
18.	Diseases transferred from subtropical and tropical countries.	W11, W4, W9, U1, U19, U2, U3, U4	classes
19.	Principles of antimicrobial treatment - antibiotic therapy and chemotherapy in infectious diseases.	W1, W12, W2, W6, W9, U14, U15, U4, K1, K5	classes, seminar
20.	Management after professional exposure to infectious agents in medical workers.	W10, W3, W7, W9, U17, K7	classes

Course advanced

Teaching methods:

clinical classes, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	multiple choice test	At least 60% correct answers
seminar	oral credit	Attendance
classes	oral credit	Attendance

Additional info

In case of excused absence from classes it should be worked out with assistance after agreement.

Entry requirements

Pharmacology, patophisiology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Geriatrics and Palliative Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard groups** B. Scientific basics of medicine, E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	examination **Activities and hours** seminar: 25, classes: 25	3.0

Goals

C1	To introduce to the student the influence of the ageing process on the clinical presentation of diseases. To highlight the impact of multimorbidity and geriatric syndromes on the diagnostic and therapeutic process, as well as the prognosis.
C2	To introduce the student to the philosophy, goals and organisational structure of palliative care. To introduce the importance of holistic care for patients at the end of their lives.
C3	To prepare the student to be capable of performing the comprehensive geriatric assessment, properly to analyse its results and use them to plan the patient’s care.
C4	To prepare the student to tackle the acute and chronic issues in patients undergoing palliative care.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	course and symptoms of the aging process and the principles of the overall geriatric assessment and interdisciplinary care for an elderly patient	E.W8	oral credit
W2	the causes and basic differences in the most common diseases in the elderly and the principles of management in basic geriatric syndromes	E.W9	oral credit
W3	the basic principles of pharmacotherapy for diseases in the elderly	E.W10	oral credit
W4	dangers associated with the hospitalisation of the elderly	E.W11	oral credit
W5	basic principles of organizing care for the elderly and the burden on the carer of the elderly	E.W12	oral credit
W6	principles of diagnosis and therapeutic management in the most common problems of palliative medicine, including 1) symptomatic treatment of the most common somatic symptoms, 2) cachexia management and the prevention and treatment of bedsores, 3) the most common emergencies in palliative medicine	E.W27	oral credit
W7	principles for palliative treatment of terminal patient	E.W28	oral credit
W8	principles for the treatment of pain, including cancer and chronic pain	E.W29	oral credit
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	oral credit
U2	evaluate and describe the somatic and mental state of the patient	E.U13	classroom observation, oral credit
U3	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, oral credit
U4	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 credit
U5	make a functional assessment of a patient with a disability	E.U22	classroom observation, oral credit
U6	assess pressure ulcers and use appropriate dressings	E.U35	classroom observation, oral credit
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	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
K3	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

Calculation of ECTS points

Activity form	Activity hours*
seminar	25
classes	25
preparation for classes	5
preparation for classes	10
preparation for examination	25

Student workload	**Hours** 90
Workload involving teacher	**Hours** 50
Practical workload	**Hours** 25

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Falls in the older patient - a geriatric syndrome.	W1, W2, W4, W5, U1, U2, U3, K2	seminar
2.	Dementia - types, signs and symptoms, diagnosis and therapeutic approach to the patient.	W1, W2, W4, W5, U1, U2, U3, U4, K2	seminar
3.	Frailty syndrome - approach to the patient.	W1, W2, W4, W5, U1, U2, U3, U4, U5, K2	seminar
4.	Risks associated with hospitalisation of the older patient. Principles and systems of long term care.	W2, W5, U1, U3, U4, U5, K2	seminar
5.	Delirium – from predisposing factors to approach to the patient.	W1, W2, W4, W5, U1, U2, U3, U4, K2	seminar
6.	Pain treatment in palliative care patients.	W6, W8, U1, U2, U3, K2	seminar
7.	Gastrointestinal symptoms in palliative care patients.	W6, W7, U1, U2, U3, K2	seminar
8.	Respiratory symptoms in palliative care patients.	W6, W7, U1, U2, U3, K2	seminar
9.	Emergencies in palliative medicine.	W6, W7, U4, K2	seminar
10.	Practical classes at the bedside. The classes will include: performance and interpretation of the comprehensive geriatric assessment, constructing a diagnostic/therapeutic/care-related plan based on a patient’s clinical, especially geriatric, profile. The analysis of cases (incontinence, ageing process, pharmacotherapy in the older patient).	W1, W2, W3, W4, W5, U1, U2, U3, U4, U5, U6, K1, K2, K3	classes

11.	Clinical exercises focusing on the approach to patients in the terminal phase of illness, communication with palliative care patients, therapeutic decision-making. Interactive methods: didactic discussion on: Care models during the end of life and organization of palliative care, titration with strong opioids, psychological and communication problems, psychiatric disturbances in palliative care patients, spiritual suffering, palliative sedation, breakthrough pain, urologic problems, cachexia.	W6, W7, W8, U1, U2, U3, U4, U6, K1, K2, K3	classes
12.	The physiology in geriatrics. Ageing and its causes, differences in pharmacokinetics of medications in older age, physiology of pain, examples of the mechanisms of organ system ageing.	W1, W3, W8	seminar
13.	Decubitus ulcerations.	W4, W5, U6, K2	seminar
14.	Malnutrition.	W1, W2, W4, W5, U1, U2, U3, K2	seminar
15.	Ethical decisions at the end of life.	W5, W7, U1, K2	seminar

Course advanced

Teaching methods:

case study, clinical classes, classes in simulated conditions, discussion, seminar

Activities	Examination methods	Credit conditions
seminar	oral credit	Active participation in the seminars.
classes	classroom observation, oral credit	Active participation in the practical classes. Performance of the assigned clinical tasks including patient assessment. The student’s team-working abilities and the approach to the patient will be taken into account in the credit assignment process.

Additional info

Absence during classes and seminars may be justified by delivery of a doctor’s excuse in the case of illness or other exceptional circumstances. The instructor will make the decision as to the justification of an absence.

Entry requirements

Pathophysiology, Pharmacology, Internal Medicine, Psychology, Neurology, ensuring students: 1. Knowledge relating to pathophysiology, differential diagnosis, and treatment of the most commonly occurring diseases among the geriatric population, 2. Physical examination and communication skills, including neurologic examination 3. Social competences relating to patients’ rights, confidentiality, and hospital ward regulations

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Emergency Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25, 2025/26
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	credit **Activities and hours** e-learning: 4, simulations: 25	2.0

Periods	**Examination**	**Number of ECTS points**
Semester 11, Semester 12	examination **Activities and hours** clinical classes: 54, simulations: 6	4.0

Goals

C1	1. Student gets knowledge about the organizational structure and tasks of emergency departments and trauma centers. 2. Acquaintance with work in emergency and trauma centers 3. Getting to know the patient's assessment according to the ABCDE scheme 4. Acquaintance with the initial treatment of a patient in a life-threatening condition 5. AAcquaintance with the principles of managing a trauma team. The role of a team leader and member. The part of consultants in the diagnostic process. 6. Familiarization with medical information in the system emergency medical services - mobile computing, teleinformatics and telemedicine, electronic medical records in emergency department

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	practical test
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	practical test
W3	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	practical test
W4	the causes, symptoms, diagnostic and therapeutic management principles for the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age, including in particular: 1) acute and chronic abdominal diseases, 2) thoracic diseases, 3) diseases of extremities and head, 4) fractures of bones and injuries to organs	F.W1	practical test
W5	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	practical test
W6	indications and rules for the use of intensive care	F.W6	practical test
W7	guidelines for cardiopulmonary resuscitation of newborns, children and adults	F.W7	practical test
W8	principles of functioning of the integrated system National Medical Rescue Service	F.W8	practical test
W9	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	practical test
W10	procedure in accidental and posttraumatic hypothermia	F.W16	practical test
W11	causes, symptoms, principles of diagnosis and therapeutic management in case of the most frequent diseases of the central nervous system in the scope: 1) cerebral edema and its consequences, with particular reference to emergencies, 2) other forms of intracranial tightness with their consequences, 3) craniocerebral injuries, 4) vascular defects of the central nervous system, 5) neoplastic tumors of the central nervous system, 6) diseases of the vertebral column and spinal cord	F.W13	practical test
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	practical examination, classroom observation, practical test
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	practical examination, practical test

U3	plan the diagnostic procedure and interpret its results	O.U3	practical examination, practical test
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	practical examination, practical test
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation, practical test
U6	inspire the learning process of others	O.U6	classroom observation, practical test
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, practical test
U8	communicate and share knowledge with colleagues in a team	O.U8	practical examination, classroom observation, practical test
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	practical test
U10	adhere to the principles of asepsis and antisepsis	F.U3	classroom observation, practical test
U11	manage a simple wound, put on and change a sterile surgical dressing	F.U4	classroom observation, practical test
U12	make a peripheral puncture	F.U5	classroom observation, practical test
U13	examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination	F.U6	classroom observation, practical test
U14	evaluate the result of a radiological examination in the most common types of fractures, particularly long bone fractures	F.U7	classroom observation, practical test
U15	perform temporary immobilization of the limb, choose the type of immobilization necessary for use in typical clinical situations and control the correctness of blood supply to the limb after the insertion of the immobilizing dressing	F.U8	classroom observation, practical test
U16	manage external bleeding	F.U9	practical examination, classroom observation, practical test
U17	perform basic resuscitation procedures using an automatic external defibrillator and other emergency procedures and first aid	F.U10	classroom observation, practical test
U18	operate according to the algorithm of advanced resuscitation activities	F.U11	classroom observation, practical test
U19	recognize subjective and physical symptoms indicating the abnormal course of pregnancy (abnormal bleeding, contractions of the uterus)	F.U13	classroom observation, practical test
U20	evaluate the condition of the unconscious patient according to international scoring scales	F.U21	practical examination, classroom observation, practical test
U21	recognise the symptoms of increasing intracranial pressure	F.U22	practical examination, classroom observation, practical test

U22	can perform and interpret FAST ultrasound (Focused Assessment with Sonography for Trauma)	F.U30	classroom observation, practical test
U23	to take the informed and legally effective consent: a) for high-risk diagnostic procedures (e.g. gastroscopy, colonoscopy), endoscopic retrograde cholangiopancreatography) b) for high-risk diagnostic procedures (transcutaneous biopsy under control) USG) c) surgery to remove the gallbladder	F.U33	classroom observation, practical test
U24	to pass on information about the death of a close friend and relative	F.U34	classroom observation, practical test
U25	provide family with information on the possibility of organ transplantation of the person who was diagnosed with brain death	F.U35	classroom observation, practical test
U26	identify and indicate methods of management of traumatic peripheral nerve damage	F.U36	classroom observation, practical test
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	practical examination, 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	promote health-promoting behaviors	O.K6	classroom observation
K6	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
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

Calculation of ECTS points

Semester 9, Semester 10

Activity form	Activity hours*
e-learning	4

simulations	25
Student workload	**Hours** 29
Workload involving teacher	**Hours** 29
Practical workload	**Hours** 25

* hour means 45 minutes

Semester 11, Semester 12

Activity form	**Activity hours***
clinical classes	54
simulations	6
kształcenie samodzielne	30
Student workload	**Hours** 90
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Trauma team role. Non-technical skills in team training. The role of Emergency Department and Trauma Center in Emergency Medical System.	W1, W10, W11, W2, 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, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	e-learning, simulations
2.	Preparation of the patient for transport, transport, patient turn over in the ED, and communication with a specialist. Primary and secondary examination, medical documentation, Organization and management of patient conditions in the ED.	W1, W10, W11, W2, 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, U3, U4, U5, U6, U7, U8, U9	e-learning, simulations

3.	Trauma team organization in practice. Airway trauma and control. Shock Head, spine, chest, abdomen, and extremities trauma. Assessment and treatment of the child with multiorgan injury	W1, W10, W11, W2, 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, U3, U4, U5, U6, U7, U8, U9	e-learning, clinical classes, simulations

Course advanced

Semester 9, Semester 10

Teaching methods:

brainstorm, discussion, e-learning, presentation, seminar, simulation, lecture, lecture with multimedia presentation, practical classes

Activities	Examination methods	Credit conditions
e-learning	practical examination	attendance
simulations	practical examination	attendance

Semester 11, Semester 12

Teaching methods:

brainstorm, classes / practicals, discussion, e-learning, presentation, simulation

Activities	Examination methods	Credit conditions
clinical classes	classroom observation, practical test	attendance
simulations	classroom observation, practical test	attendance

Entry requirements

The student is able to correctly assess the victim according to the ABCDE scheme, perform a full patient examination, collect an interview, measure blood pressure, get intravascular access, interpret basic laboratory tests, X-ray images

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Forensic Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** G. Law and organizational aspects of medicine
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	examination **Activities and hours** seminar: 32, classes: 10, e-learning: 8	3.0

Goals

C1	Presentation of tasks of forensic medicine as well as overlapping promlems with clinical specialities

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	methods of conducting scientific research	O.W5	written examination, classroom observation
W2	legal obligations of the doctor concerning pronouncement of death	G.W7	written examination, classroom observation

W3	legal regulations concerning transplantation, artificial procreation, abortion, aesthetic procedures, palliative treatment, mental illness, etc.	G.W9	written examination, classroom observation
W4	the concept of violent and sudden death and the difference between the concepts of injury and damage	G.W12	written examination, classroom observation
W5	legal grounds and rules of doctor's conduct during examination of the body at the place of its disclosure and judicial and medical examination of the body	G.W13	written examination, classroom observation
W6	principles of court-medical diagnostics and opinions in cases concerning infanticide and reconstruction of circumstances of a road accident	G.W14	written examination, classroom observation
W7	principles of judicial and medical opinion on the ability to participate in procedural activities, biological effect and health impairment	G.W16	written examination, classroom observation
W8	the concept of medical error, the most common causes of medical errors and the principle of giving opinions in such cases	G.W17	written examination, classroom observation
W9	principles of material collection for toxicological and hemogenetic tests	G.W18	written examination, classroom observation
W10	legal grounds and rules for conducting judicial and medical autopsy, applying in specific cases additional techniques of autopsy and post-mortem imaging examinations	G.W20	written examination, classroom observation
W11	legal grounds and rules of doctor's conduct during examination of the body at the place of its disclosure and judicial and medical examination of the body	G.W21	written examination, classroom observation
W12	rules for estimating the time of death on the basis of death signs	G.W22	written examination, classroom observation
W13	the importance of environmental xenobiotics, including their exogenous transformation and the role of biomarkers (exposure, effects, vulnerability) in the diagnosis of environmental and occupational diseases	G.W23	written examination, classroom observation
W14	rules of preparation of opinon of expert witness in criminal matters	G.W15	written examination, classroom observation
Skills – Student can:			
U1	plan own learning activities and constantly learn in order to update own knowledge	O.U5	written examination, classroom observation
U2	recognise the behaviors and symptoms indicating the possibility of violence against the child during the examination of the child	G.U7	written examination, classroom observation
U3	act in a manner that avoids medical errors	G.U8	written examination, classroom observation
U4	take blood for toxicological tests and protect the material for hemogenetic tests	G.U9	written examination, classroom observation
U5	identify the relevant legislation containing standards for the provision of health services and the medical profession	G.U11	written examination, classroom observation
U6	when providing emergency aid, make efforts not to destroy important forensic evidence which does not interfere with the primary objective of medical intervention (saving lives / health)	G.U12	written examination, classroom observation

Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	written examination, classroom observation
K2	formulate opinions on the various aspects of the professional activity	O.K10	written examination, classroom observation

Calculation of ECTS points

Activity form	Activity hours*
seminar	32
classes	10
e-learning	8
preparation for classes	15
preparation of multimedia presentation	10
preparation for examination	5

Student workload	**Hours** 80
Workload involving teacher	**Hours** 50
Practical workload	**Hours** 10

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Oględziny zwłok na miejscu ich ujawnienia. Pośmiertne badania obrazowe. Technika sądowo - lekarskiej sekcji zwłok. Rodzaje obrażeń (w tym rany cięte, kłute, postrzały z broni palnej). Neurotraumatologia sądowo - lekarska. Problemy wypadkowości drogowej. Podstawowe zagadnienia z zakresu kryminalistyki. Uduszenie gwałtowne. Wypadek, samobójstwo, zabójstwo. Dzieciobójstwo. Zespół maltretowanego dziecka. Zgony z przyczyn chorobowych samoistnych. Błąd medyczny. Opiniowanie w sprawach karnych i cywilnych. Toksykologia sądowo - lekarska, problemy metodyczno - opiniodawcze. Genetyka sądowa	W1, W10, W11, W12, W13, W14, W2, W3, W4, W5, W6, W7, W8, W9, U1, U2, U3, U4, U5, U6, K1, K2	classes, seminar, e-learning

Course advanced

Teaching methods:

classes / practicals, e-learning, group work, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	written examination, classroom observation	attendance
classes	written examination, classroom observation	self-prepared presentation on selected topic
e-learning	written examination	written exam - 10 open questions

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Oncology and Hematology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 6, seminar: 18, classes: 32	3.0

Goals

G1	Convey general knowledge of medical oncology, especially regarding systemic treatment of most common malignancies.
G2	Familiarize students with 1) basics of psychological mechanisms guiding human functioning in health and disease; 2) the environmental and epidemiological background of most common human cancers; 3) basics of early cancer diagnosis and principles of screening programs in oncology; 4)the possibilities of modern cancer therapy (including multimedia therapy), prospects of cell and gene therapies and their adverse effects; 5)the principles of adjuvant therapies in oncology, diagnostic and therapeutic algorithms in most common human cancers; 6 the causes, symptoms, principles of diagnosing and therapeutic procedures of most common issues of palliative medicine

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	written examination
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written examination
W3	environmental and epidemiological determinants of the most frequent diseases	E.W1	written examination
W4	environmental and epidemiological determinants of the most frequent human neoplastic diseases	E.W23	written examination
W5	basics of early detection of neoplastic diseases and principles of screening in oncology	E.W24	written examination
W6	possibilities of modern neoplastic therapy, including multimodal therapy, perspectives of cellular and gene therapies and their adverse effects	E.W25	written examination
W7	principles of combination therapies in oncology, algorithms of diagnostic and therapeutic procedures in the most common human cancers	E.W26	written examination
W8	principles for the treatment of pain, including cancer and chronic pain	E.W29	written examination
W9	principles for palliative treatment of terminal patient	E.W28	written examination
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	written examination, classroom observation
U2	plan the diagnostic procedure and interpret its results	O.U3	written examination, classroom observation
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	written examination, classroom observation
U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U5	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	classroom observation
U6	plan specialist consultations	E.U32	classroom observation
U7	assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy	E.U39	booklet of practical skills
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation
K3	promote health-promoting behaviors	O.K6	classroom observation
K4	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
e-learning	6
seminar	18
classes	32
preparation for classes	24
preparation for examination	10

Student workload	**Hours** 90
Workload involving teacher	**Hours** 56
Practical workload	**Hours** 32

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Principles of carcinogenesis	W3, W4, K1	e-learning
2.	Oncology - from carcinogenesis to treatment	W6, W7	e-learning
3.	Modern therapies in oncology.	W6, W7, K3	e-learning
4.	Multidisciplinary approach to breast cancer	W2, W6, W7, W8, W9	seminar
5.	Multidisciplinary approach to melanoma	W1, W4, W5, W6	seminar
6.	Introduction to the course Practical aspects in clinical oncology	W7, U7, K4	seminar
7.	Multidisciplinary approach to lung cancer	W1, W2, W4, W5, W6, W7	seminar
8.	Multidisciplinary approach to head and neck cancer	W1, U1, U2, U6	seminar
9.	Multidisciplinary approach to urological malignancies	W1, W2, W5, W6, W7	seminar
10.	Multidisciplinary approach to Upper GI	W1, W2, W5, W6, W7	seminar
11.	Principles of radiotherapy	U4, K2	seminar
12.	Radiotherapy in oncological emergencies, supportive care in cancer	W1, W2, W5, W6, W7	seminar
13.	Principles of hematology	W1, W2, W5, W6, W7	classes
14.	Multidisciplinary approach to testicular cancer	W1, W2	seminar
15.	Drug, drugs, drugs - workshops	W1, W2, W5, W6, W7	classes
16.	Communications - workshops	W6, W7, U3, U5	classes

17.	Cases - workshops	W1, W2, W5, W6, W7	classes
18.	Treatment planning- workshops	W1, W2, W5, W6, W7	classes
19.	Multidisciplinary approach to colon cancer	W8, W9, U3, U5, K3	seminar

Course advanced

Teaching methods:

classes / practicals, clinical classes, e-learning, seminar, workshop, lecture, PBL Problem Based Learning

Activities	Examination methods	Credit conditions
e-learning	written examination	Final single-choice test (30 questions)
seminar	written examination, classroom observation	Final single-choice test (30 questions)
classes	booklet of practical skills, classroom observation	Final single-choice test (30 questions)

Additional info

Entry requirements

1. Ability to conduct a medical interview and perform a physical examination of patient.
2. Basic knowledge of anatomy, patophysiology and patomorphology.
3. Basic knowledge of pharmacology and immunology.

Prerequisites: Internal Medicine II, Pathology, Pharmacology
Seminars, workshops and exercises - obligatory. Lectures - optional

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Orthopedics and Traumatology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	examination **Activities and hours** e-learning: 7, seminar: 25, classes: 25	4.0

Goals

C1	Orthopedics - to familiarize students with the scope of knowledge of orthopedics, to present the most common diseases of the locomotor system of adults and children, methods of diagnosis, principles of preventive and therapeutic treatment, principles of surgical treatment
C2	Traumatology: to familiarize students with the basic skills in the diagnosis, protection and treatment of injuries, understanding the impact of the injury itself on the human body.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	clinical case presentation, test

W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	clinical case presentation, test
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	clinical case presentation, test
U2	plan the diagnostic procedure and interpret its results	O.U3	clinical case presentation, test
U3	evaluate the result of a radiological examination in the most common types of fractures, particularly long bone fractures	F.U7	clinical case presentation, test
U4	perform temporary immobilization of the limb, choose the type of immobilization necessary for use in typical clinical situations and control the correctness of blood supply to the limb after the insertion of the immobilizing dressing	F.U8	clinical case presentation, test

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	7
seminar	25
classes	25
preparation for classes	20
preparation for examination	23

Student workload	**Hours** 100
Workload involving teacher	**Hours** 57
Practical workload	**Hours** 25

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Contemporary orthopedics	W1, W2, U1	e-learning
2.	Orthopedics. Motor organs - diagnostics, examination. Children orthopedics - spinal deformities, birth defects, limping child. Adult orthopedics - Pain syndromes of the spine (+ Osteoporosis), cancers, osteoarthritis of large joints , arthroscopy / endoscopy in orthopedics	W1, W2, U1	classes, seminar

3.	Orthopedic examination including elements of neurological examination. The most common birth and acquired defects of the osteoarticular system - principles of diagnosis and treatment. Osteoarthritis. Motor organ neoplasms - symptoms, diagnostics, principles of treatment. Basic issues related to primary and secondary osteoporosis. The most common injuries to the limbs and spine. Multi-organ injuries. Indications and types of orthopedic equipment used.	W1, W2, U1, U2, U3, U4	classes

Course advanced

Teaching methods:

case study, brainstorm, clinical classes, discussion, e-learning, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning	test	attendance and active participation
seminar	test	attendance and active participation
classes	clinical case presentation, test	active participation, presenting practical physical examination skills as well as the ability to plan diagnostics and further treatment of the most common types of injuries and orthopedic diseases

Additional info

Egzamin w formie testu wyboru podczas trwania sesji. Obowiązuje sztywna skala ocen zamieszczona na stronie klinika.net.pl

Entry requirements

Brak

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Rehabilitation

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 2, seminar: 2, classes: 13	1.0

Goals

C1	familiarizing the student with information on the concept of disability
C2	familiarizing the student with the types and use of rehabilitation equipment
C3	familiarizing the student with rehabilitation as a comprehensive process, related to basic treatment
C4	familiarizing the student with rehabilitation in neurology, orthopedics, cardiology, pulmonology, pediatrics, rheumatology and rehabilitation of the elderly.

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	clinical case presentation, written credit
W2	symptoms and course of diseases	O.W2	clinical case presentation, written credit
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	clinical case presentation, written credit
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	clinical case presentation, written credit
U2	plan the diagnostic procedure and interpret its results	O.U3	clinical case presentation, written credit
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	clinical case presentation, written credit
U4	adhere to the principles of asepsis and antisepsis	F.U3	clinical case presentation, written credit
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	promote health-promoting behaviors	O.K6	classroom observation
K6	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
K7	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K8	use objective sources of information	O.K7	classroom observation
K9	formulate conclusions from own measurements or observations	O.K8	classroom observation, clinical case presentation
K10	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
K11	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
e-learning	2
seminar	2
classes	13
preparation for examination	5
practice	5

Student workload	**Hours** 27
Workload involving teacher	**Hours** 17
Practical workload	**Hours** 18

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	current trends and development directions	W2, W3, U4, K1, K11, K2, K6, K8, K9	e-learning
2.	physiotherapeutic management in orthopedic movement disorders.	W1, U1, U3, U4, K2, K3, K5, K6, K7	seminar
3.	contemporary trends in rehabilitation of motor organs; Rehabilitation in back pain syndromes, rehabilitation in: knee and shoulder joint diseases, the use of physical treatments in the treatment of musculoskeletal dysfunction.	U1, U2, U3, U4, K10, K4, K5, K6, K7, K9	classes

Course advanced

Teaching methods:

case study, clinical classes, demonstration, discussion, e-learning, seminar, lecture

Activities	Examination methods	Credit conditions
e-learning		active participation
seminar	written credit	active participation
classes	classroom observation, clinical case presentation, written credit	active participation

Additional info

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Entry requirements

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Workshop of Clinical Psychological Skills

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** D. Behavioral and social sciences with elements of professionalism
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** simulations: 20	1.0

Goals

C1	Analysing mechanisms of patient functioning specifically in context of patient recourses
C2	Analysing clinical cases
C3	Practicing motivating dialogue techniques practicing skills of increasing patient motivation
C4	Analysing team cooperation. Skills of emotional and strategical support oferred for emotinallly difficult tasks

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	the importance of verbal and non-verbal communication in the process of communicating with the patient and the notion of trust in the interaction with the patient	D.W6	clinical case presentation
W2	basic psychological mechanisms of human functioning in health and disease	D.W9	clinical case presentation
W3	principles of teamwork	D.W18	clinical case presentation
W4	issues related to the adaptation of patients and their families to disease as a difficult situation and to related events, including dying and family mourning processes	D.W11	clinical case presentation
Skills – Student can:			
U1	identify signs of anti-health and self-destructive behavior and respond appropriately to them	D.U2	clinical case presentation
U2	take into account the subjective needs and expectations of the patient resulting from socio-cultural conditions in the process of therapeutic management	D.U1	clinical case presentation
U3	involve the patient in the therapeutic process	D.U7	clinical case presentation
U4	communicate with colleagues with constructive feedback and support	D.U12	clinical case presentation
U5	be able to work in a multiprofessional team, in a multicultural and multinational environment	D.U21	clinical case presentation
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	clinical case presentation
K2	promote health-promoting behaviors	O.K6	clinical case presentation
K3	formulate conclusions from own measurements or observations	O.K8	clinical case presentation

Calculation of ECTS points

Activity form	**Activity hours***
simulations	20
case analysis	5
kształcenie samodzielne	5

Student workload	**Hours** 30
Workload involving teacher	**Hours** 20
Practical workload	**Hours** 25

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Physician own resources and coping mechanisms in resolving emotionallly dificult clinical tasks	W1, W2, W3, W4, U1, U3, U5, K1, K2, K3	simulations
2.	Motivating dialoque in clinical practice	W2, U1, U2, U3, K1, K2, K3	simulations
3.	Analysing clinical cases in biopsychosocial contex	W1, W2, W3, W4, U1, U4, U5, K1, K3	simulations
4.	Burnout prevention. Developement of ones own recourses	W2, W3, U1, U2, U4, U5, K1, K2, K3	simulations

Course advanced

Teaching methods:

case study, discussion, case study method, group work, simulation, workshop, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
simulations	clinical case presentation	The course is assessed on the basis of personal engagement as well as attendance, presentation - case study

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Mental disorders in children and adolescents. Diagnosis and treatment.

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	To familiarize students with the issues of developmental psychiatry in the context of new theories of personalized medicine, in which therapeutic decisions are made not only in relation to the diagnosis but also to the individual specific characteristics of each patient.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	test
Skills – Student can:			

U1	identify medical problems and prioritize medical management	O.U1	classroom observation, clinical case presentation, test
U2	carry out a medical interview with the child and his or her family	E.U2	classroom observation, clinical case presentation, test
U3	conduct a psychiatric examination	E.U5	classroom observation, clinical case presentation, test
U4	recognize the condition after drinking alcohol, after using drugs and other substances	E.U15	classroom observation, clinical case presentation, test
U5	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, clinical case presentation, test
U6	evaluate and describe the somatic and mental state of the patient	E.U13	classroom observation, clinical case presentation, test
U7	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, clinical case presentation, test
U8	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, clinical case presentation, test
U9	inspire the learning process of others	O.U6	classroom observation, clinical case presentation, test
U10	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation, clinical case presentation, test
U11	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, clinical case presentation, test
U12	plan specialist consultations	E.U32	classroom observation, clinical case presentation, test
U13	maintain patient's medical records	E.U38	classroom observation, clinical case presentation, test
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, clinical case presentation
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation, clinical case presentation, test
K3	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, clinical case presentation
K4	use objective sources of information	O.K7	classroom observation, clinical case presentation

K5	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, clinical case presentation
K6	formulate opinions on the various aspects of the professional activity	O.K10	classroom observation, clinical case presentation
K7	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, clinical case presentation, test

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for examination	10
preparation of a paper	10
preparation for classes	5
case analysis	5

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 5

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Introduction to the issues of Child and Adolescent Psychiatry. Classification of developmental age mental disorders according to ICD-10; DSM-V (nocturnal enuresis, anxiety disorders, specific anxiety disorder, eating disorders, nervous tics, Attention Deficit Hyperactivity Disorder, autism spectrum disorder, behavioral and emotional disorders, acute polymorphic psychotic disorders, schizophrenia, bipolar disorder). Basics of pharmacotherapy.	W1, U1, U13, U2, U3, U5, U6, K1, K2, K3, K7	seminar

2.	Fundamentals of genetics and molecular biology of mental disorders of developmental age - selected issues (autism, schizophrenia, affective disorders of developmental age). The impact of interaction between genetic and environmental factors on the occurrence of mental disorders in early childhood and adolescence. Applied techniques, research interpretation.	W1, U11, U12, U5, U6, U7, K3, K4, K5	seminar
3.	The influence of the immune system, inflammatory factors on the permeability of the blood-brain barrier and the intestinal barrier in acute developmental mental disorders. Impact of environmental factors on the occurrence of the above phenomena.	W1, U10, U11, U12, U7, U9, K4, K5, K6	seminar
4.	The role of oxidative (ROS) and nitrosative (NOS) stress in selected developmental diseases. Central and peripheral vascular dysfunction during acute psychotic disorders. The effect of treatment on the condition of peripheral vessels. Cardiometabolic complications.	W1, U12, U13, U5, U7, U8, U9, K1, K2, K4, K5, K6, K7	seminar
5.	The role of the microbiome in selected units of developmental disorders (autism, schizophrenia, affective disorders). Impact of eating habits on the occurrence of developmental age mental disorders.	W1, U1, U10, U11, U12, U13, U2, U3, U5, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	seminar
6.	Konektom - the use of new neuroimaging techniques to create neural maps in selected diseases of developmental age psychiatry. Inflammatory diseases of the nervous system.	W1, U10, U11, U12, U13, U7, U9, K1, K2, K3, K4, K5, K6, K7	seminar
7.	Biomarkers in developmental psychiatry; in search of new drugs.	U10, U11, U12, U13, U3, U5, U6, U8, U9, K1, K2, K3, K4, K5, K6, K7	seminar
8.	Eating disorders; prenatal stress, coexistence of genetic-biological-neuroendocrine factors with environmental and family factors in anorexia nervosa and bulimia.	W1, U1, U10, U11, U12, U13, U2, U3, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	seminar
9.	Addictions among children and adolescents: alcohol, media, psychoactive substances. Addictive mechanisms. Mechanism theories, main areas involved in addiction, addiction phases, predispositions related to early childhood stress, experience of trauma for the onset of addiction. Abstinence symptoms. The effect of addiction on the plasticity of nerve connections in the central nervous system in adolescence (MRI). Co-occurrence of addiction and other neuropsychiatric disorders.	W1, U1, U10, U11, U12, U13, U2, U3, U4, U5, U6, U7, U9, K1, K2, K3, K4, K5, K6, K7	seminar
10.	Neuropsychotherapy as an inseparable element of therapy of developmental age mental disorders: therapeutic currents used and the basis of molecular - genetic and psychoneuroendocrine mechanisms responsible for behavioral and experimental changes in psychotherapy. Between psychiatric and therapeutic-psychological diagnosis.	W1, U1, U10, U13, U2, U5, U7, U8, U9, K1, K2, K3, K4, K5, K6, K7	seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, discussion, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation, clinical case presentation, test	Oral presentation. Observation of the student's attitude and commitment during classes. Passing the verification test.

Entry requirements

Obtaining learning outcomes in subjects:
Physiology, Pathophysiology, Neurophysiology, Neurobiology, Anatomy.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Self-inflicted injury and suicidal behavior among children and adolescents

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	The student will recognize and understand the problem of self-injury and suicidal behaviour in children and adolescents.
C2	The student will acquire the ability to recognize the risk of self-injury and suicidal behaviour in children and adolescents.
C3	The student will acquire the ability to make contact with a child-adolescent patient and the family of patient, to demonstrate an attitude of empathy, understanding and responsibility in the care of children and youth.
C4	Based on the identified problems, the student will be able to set therapeutic goals and interventions in relation to the child-adolescent patient and the family.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, clinical case presentation, test
W2	principles of implementing psychotherapeutic dialog and types of therapeutic interventions	E.W57	classroom observation, clinical case presentation, test
Skills – Student can:			
U1	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation, clinical case presentation, test
U2	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, clinical case presentation, test
U3	recognize immediate life-threatening conditions	E.U14	classroom observation, clinical case presentation, test
U4	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, clinical case presentation, test
U5	qualify the patient for home and hospital treatment	E.U20	classroom observation, clinical case presentation, test
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, test
K2	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, test
K3	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, test
K4	respect medical confidentiality and patients' rights	O.K3	classroom observation, test
K5	to be guided by the well-being of a patient	O.K2	classroom observation, test

Calculation of ECTS points

Activity form	Activity hours*
seminar	30
preparation for classes	15
preparation for examination	15

Student workload	Hours 60
Workload involving teacher	Hours 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Self-injury (self-aggression) and suicidal behaviour - concepts discussion, definition problems. Gradation of self-destructive behavior. The difference between self-injury and suicide attempts. Methods of committing suicide and methods of self-injury. The scale of physical injuries and potential life threatening.	W1, U1, U3	seminar
2.	Autoaggression - types of autoaggressive behavior, scale of the phenomenon, risk factors. Self-injury and gender, age, culture, ethnicity, social status, sexuality, mental disorder. The phenomenon of the growing frequency of auto-aggressive behaviour among young people. Body modifications in culture. Tattoos, earrings, scarification, skin burns and other forms of body modification among children and adolescents and their relationship with self-aggression as a psychopathological phenomenon.	W1	seminar
3.	Understanding auto-aggressive behavior - self-aggression and attachment, affect regulation, self-image, attitude towards the body and the impact of traumatic experiences.	W1	seminar
4.	Auto-aggression and suicide attempt - differentiation. Autoaggressive behavior as a precursor of suicidal behavior. Phenomena that may indicate an increasing suicidal risk in people with auto-aggressive behavior.	W1, U1, U3	seminar
5.	Suicide attempts and suicide among young people as a growing problem. How to talk to young people (and children) who inform about suicidal thoughts? Estimating the risk of suicide attempt.	W1, W2, U1, U2, U5, K1, K2, K3, K5	seminar
6.	Suicide attempts in adolescents - multifactorial description - relationship with life situation, functioning styles and mental disorders. Depressive disorders and the risk of suicide. Other risk factors. Frequency of suicidal thoughts and behaviour - statistical data.	W1, U1, U3, U4	seminar
7.	Self-injury and suicide attempts as a signal to significant people. Systemic understanding.	W1, U2, U4, K1, K2, K3, K4, K5	seminar
8.	Management in life-threatening situations - case management. How do you talk to a client who is at risk of suicide attempt (or after a suicide attempt)? The importance of helping person's attitudes. The importance of drug treatment.	U1, U2, U3, U4, U5, K1, K2, K3, K4, K5	seminar

9.	Crisis intervention, description of the method and procedures. The most important assumptions of Self-injury therapy and suicidal behaviour. The importance of posttraumatic disorder therapy. Work with the body. Family therapy	W2, U2, U3, U4, U5, K1, K2, K3, K4, K5	seminar
10.	How to build and extend a support system for people in a state of immediate threat to life? Including a family in a life-threatening situation. What to mobilize the family for when dealing with an auto-aggressive patient, and with a child with a serious risk of suicide?	U1, U2, U3, U4, U5, K1, K2, K3, K4, K5	seminar
11.	How should a helping person deal with emotions? How is the helping person experienced by those with self-aggression? A well-functioning working alliance is the most important healing factor for those who want to kill themselves. How to strengthen a working alliance?	W2, U2, U4, K1, K2, K3, K4, K5	seminar
12.	Legal aspect - regulations regarding how to deal with suspected life or health threat, confidentiality of therapeutic contact and the possibility of disclosing information about patient. How to inform the parent of an underage person?	U2, U4, K1, K2, K3, K4, K5	seminar

Course advanced

Teaching methods:

case study, brainstorm, discussion, educational film, case study method, situation method, presentation, group work, seminar, simulated patient, workshop, lecture, practical classes

Activities	Examination methods	Credit conditions
seminar	classroom observation, clinical case presentation, test	Attendance at 80% of classes. Oral presentation. Observation of the student's attitude and commitment during classes. Passing the verification test.

Entry requirements

Knowledge, skills and competences in the field of psychiatry.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Why teenagers scare their parents?

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0313 Psychology	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 10, classes: 20	2.0

Goals

C1	Gaining knowledge of human psychobiological development and distinguishing features of adolescence, risk factors and protective factors of auto-aggressive behaviour (suicidal thoughts, suicidal tendencies, suicide attempts, self-harm). Distinguishing features of depressive symptoms during puberty. Epidemiology of depressive symptoms and suicide during puberty. Characteristic features of other self-destructive behaviours such as risky use of substances or risky sexual behaviour. Diagnosing the pre-suicidal syndrome. Ability to implement prevention and intervention-oriented action towards patients at developmental age, towards their families and their peers.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	theoretical colloquiums

W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	theoretical colloquiums
W3	principles of diagnostics and emergency management in psychiatry, including suicide issues	E.W18	theoretical colloquiums
W4	environmental and epidemiological determinants of the most frequent diseases	E.W1	theoretical colloquiums
W5	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	theoretical colloquiums
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	classroom observation, oral answer, clinical case presentation
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, oral answer, clinical case presentation
U3	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, oral answer, clinical case presentation
U4	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, oral answer, clinical case presentation
U5	carry out a medical interview with the child and his or her family	E.U2	classroom observation, oral answer, clinical case presentation
U6	conduct a psychiatric examination	E.U5	classroom observation, oral answer, clinical case presentation
U7	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, oral answer, clinical case presentation
U8	qualify the patient for home and hospital treatment	E.U20	classroom observation, oral answer, clinical case presentation
U9	plan specialist consultations	E.U32	classroom observation, oral answer, clinical case presentation
U10	maintain patient's medical records	E.U38	classroom observation, oral answer, clinical case presentation
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, oral answer, clinical case presentation
K2	to be guided by the well-being of a patient	O.K2	classroom observation, oral answer, clinical case presentation
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, oral answer, clinical case presentation

K4	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation, oral answer, clinical case presentation
K5	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, oral answer, clinical case presentation

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	10
classes	20
case analysis	10
preparation for classes	5
preparation for colloquium	10
kształcenie samodzielne	5

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	1. Contemporary approach to the problems of adolescence - is a concept of "transitory period" still valid?	W2, W4, W5, U10, U2, U5, U6, U7, U9, K1, K3, K5	classes, e-learning
2.	2. Multifaceted diagnosis during adolescence/puberty	W1, W2, U1, U2, U7, U9, K1, K2, K3, K4	classes, e-learning
3.	3. Epidemiology of depression and suicidal behaviour	W3, W5, U10, U4, U7, K3	classes, e-learning
4.	4. Depression during adolescence/puberty	W1, W2, W3, W4, W5, U1, U10, U2, U3, U4, U5, U6, U9, K1, K3	classes, e-learning
5.	5. Disorders of conduct and emotions during adolescence/puberty	W1, W2, W4, U1, U3, U4, U5, U6, U7, K1, K2, K3	classes, e-learning

6.	6. Violence: types and its manifestations	W1, W2, W3, W5, U1, U2, U3, U4, U5, U6, U7, U9, K1, K3, K5	classes, e-learning
7.	7. Risk factors and protective factors for suicidal behaviour	W2, W3, W5, U2, U3, U4, U5, U6, U8, U9, K1, K3, K4	classes, e-learning
8.	8. Self-harm during adolescence/puberty	W1, U1, U10, U2, U3, U4, U9, K1, K3	classes, e-learning
9.	9. Treatment of self-destructive symptoms	W2, W3, W5, U1, U10, U2, U3, U4, U6, U7, U9, K1, K3	classes, e-learning
10.	10. Prevention of suicidal behaviour	W2, U7, K1, K4	classes, e-learning

Course advanced

Teaching methods:

case study, clinical classes, discussion, lecture

Activities	Examination methods	Credit conditions
e-learning	theoretical colloquiums	obecność obowiązkowa
classes	classroom observation, oral answer, clinical case presentation	obecność obowiązkowa, test wielokrotnego wyboru

Additional info

Entry requirements

Nie ma wymagań wstępnych

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Foundations of psychoanalysis

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 16, classes: 14	2.0

Goals

C1	Acquaintance with basic concepts of psychoanalysis
C2	Acquaintance with psychotherapeutic techniques used in psychoanalysis
C3	To familiarize participants with psychological phenomena occurring in psychoanalysis
C4	Teaching basic practical skills, including interviewing and case formulation in the context of psychoanalysis
C5	Acquainting with directions in psychoanalysis development
C6	Expanding the knowledge on psychopathology of neuroses, personality disorders and psychoses in the psychoanalytic approach

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	basic concepts of the pathogenesis of mental disorders	E.W15	multiple choice test
W2	the general symptomatology of mental disorders and the rules for classifying them according to the main classification systems	E.W16	multiple choice test
W3	the problem of human sexuality and fundamental disorders associated with it	E.W21	multiple choice test
W4	understands the symptoms, understands the etiology, treatment rules and is able to establish therapeutic contact with patients with the most common disorders: a) anxiety, somatic and other neurotic forms b) post-traumatic disorders c) personality and behavioral disorders of adults	E.W56	multiple choice test
W5	principles of implementing psychotherapeutic dialog and types of therapeutic interventions	E.W57	multiple choice test
W6	basic psychotherapeutic techniques and principles for combining psychotherapy and pharmacotherapy	E.W58	multiple choice test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, multiple choice test
U2	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation
U3	inspire the learning process of others	O.U6	classroom observation
U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation
U5	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, multiple choice test
U6	conduct a psychiatric examination	E.U5	classroom observation
U7	evaluate and describe the somatic and mental state of the patient	E.U13	classroom observation
U8	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, multiple choice test
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	respect medical confidentiality and patients' rights	O.K3	classroom observation
K3	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
K4	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
seminar	16
classes	14
case analysis	6
preparation for examination	7
preparation for classes	6
preparation for classes	4

Student workload	Hours 53
Workload involving teacher	Hours 30
Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Basic concepts of psychoanalytic theory	W1, W2, W3, W4, W6, U2, U3, U5, K4	seminar
2.	History of the development of psychoanalysis with elements of case analysis	W1, W2, W3, W6, U2, U3, U5, K4	seminar
3.	Freud's stages of psychosexual development, types of character	W1, W2, W3, U2, U3, U5, K4	seminar
4.	Personality structure, ego defense mechanisms	W1, W2, W3, U2, U3, U5, K4	seminar
5.	Practice of psychoanalysis - principles, goals and methods	W1, W2, W3, W4, W5, W6, U2, U3	seminar
6.	Directions of psychoanalysis development - analytical psychology by Carl Gustav Jung, individual psychology by Alfred Adler	W1, W2, W3, W6, U2, U3, U5, K4	seminar
7.	Directions of psychoanalysis development - self psychology, ego psychology	W1, W2, W3, W6, U2, U3, U5, K4	seminar
8.	Directions of psychoanalysis development - object relations theory	W1, W2, W3, W6, U2, U3, U5, K4	seminar
9.	Place of psychoanalysis in 21st century medicine, training in psychoanalysis	W1, W2, W5, W6, U2, U3, U5, K4	seminar
10.	Psychoanalysis as a treatment method - analysis of classical cases	W1, W2, W3, W4, U1, U2, U3, U7, U8, K1, K2, K3, K4	classes

11.	Psychoanalytic treatment process - insight and working trough - working with clinical material	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes
12.	Psychoanalytic treatment process - resistance and working with resistance - working with clinical material	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes
13.	Psychoanalytic treatment process - dream analysis - working with clinical material	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes
14.	Case study I	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes
15.	Case study II	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes
16.	Case study III	W1, W2, W3, W4, W5, W6, U1, U2, U3, U4, U5, U6, U7, U8, K1, K2, K3, K4	classes

Course advanced

Teaching methods:

case study, clinical classes, discussion, group work, seminar

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Final test carried out after the end of the course, covering 20 questions. There are five possible answers for each question - only one answer is correct. The pass mark is 60%
classes	classroom observation, multiple choice test	Active student participation in classes. Theoretical content included in the final test.

Additional info

The condition of passing the classes and seminars is theoretical preparation and active participation in classes.
Absences from classes during the whole course are not allowed.

Entry requirements

Attendance at all classes and seminars is obligatory.
Completing the courses: Clinical Psychology, Psychiatry 1/2

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Clinical Immunology as modern interdisciplinary science

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 14, classes: 16	2.0

Goals

C1	Acquiring a broad knowledge of primary and secondary immunodeficiencies as well as diagnostic and therapeutic methods in these diseases
C2	Introduction to methods used in the immunological laboratory.
C3	Acquiring basic knowledge in the field of transplantology and immunotherapy.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	symptoms and course of diseases	O.W2	oral answer
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral answer
W3	methods of conducting scientific research	O.W5	oral answer
W4	theoretical and practical basics of laboratory diagnostics	E.W40	oral answer
W5	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	oral answer
W6	possibilities of modern neoplastic therapy, including multimodal therapy, perspectives of cellular and gene therapies and their adverse effects	E.W25	oral answer
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation
U3	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
U4	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation
U5	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	classroom observation
U6	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	classroom observation
U7	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	classroom observation
Social competences – Student is ready to:			
K1	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
K2	formulate conclusions from own measurements or observations	O.K8	classroom observation
K3	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
K4	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
K5	to be guided by the well-being of a patient	O.K2	classroom observation
K6	respect medical confidentiality and patients' rights	O.K3	classroom observation
K7	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K8	use objective sources of information	O.K7	classroom observation

Calculation of ECTS points

Activity form	Activity hours*
seminar	14
classes	16
case analysis	4
preparation for classes	5
preparation for classes	5
kształcenie samodzielne	16

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Primary immunodeficiencies - discussion of clinical cases, substitution of immunoglobulins in primary immunodeficiencies, laboratory diagnostics including primary immunodeficiencies, autoimmune diseases, HLA typing, flow cytofluorimetric method Secondary immunodeficiencies - diagnosis and treatment	W1, W2, W4, W5, U1, U2, U4, U5, U6, U7, K1, K2, K3, K4, K5, K6	classes, seminar
2.	Therapeutic use of stem cells Hematopoietic stem cell transplantation - practical aspects Patient after hematopoietic stem cell transplantation Stem cell separation / stem cell bank	W3, U2, U3, U5, U6, U7, K1, K2, K3, K4, K5, K6, K7, K8	classes, seminar
3.	Aging of the immune system Selected issues in immunopharmacology Adult patient with primary immunodeficiency Vasculopathies - etiopathogenesis, diagnosis, treatment Cancer immunology - discussion of new diagnostic and treatment methods	W1, W2, W3, W4, W6, U1, U2, U3, U4, U5, U6, U7, K1, K2, K3, K4, K5, K6, K7, K8	classes, seminar

Course advanced

Teaching methods:

case study, clinical classes, laboratories (labs), seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation, oral answer	zaliczenie ustne
classes	classroom observation	zaliczenie ustne

Additional info

Absence from classes: students absent from classes for justified reasons must do their classes within the time agreed with the teacher.

Entry requirements

Knowledge of basic and clinical immunology - passed obligatory classes, basic knowledge in the field of internal medicine and pediatrics

How to survive in emergency care - what the doctor should know

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	The aim of the subject is to familiarize students with the specifics of emergency treatment in general practice.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	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.W7	practical examination
W2	the basic principles of pharmacotherapy for diseases in the elderly	E.W10	practical examination
W3	rules of conduct in the event of the detection of an infectious disease	E.W33	practical examination
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	practical examination
U2	plan the diagnostic procedure and interpret its results	O.U3	practical examination
U3	carry out a medical history with an adult patient	E.U1	practical examination
U4	carry out a medical interview with the child and his or her family	E.U2	practical examination

U5	conduct a full and targeted physical examination of an adult patient	E.U3	practical examination
U6	carry out a physical examination of a child of all ages	E.U4	practical examination
U7	perform differential diagnosis of the most common diseases of adults and children	E.U12	practical examination
U8	plan diagnostic, therapeutic and prophylactic procedures	E.U16	practical examination
U9	qualify the patient for home and hospital treatment	E.U20	practical examination
U10	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	practical examination
U11	plan specialist consultations	E.U32	practical examination
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	group assessment
K2	formulate conclusions from own measurements or observations	O.K8	group assessment
K3	use objective sources of information	O.K7	group assessment

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	30

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Causes, symptoms, principles of diagnosis and therapeutic procedure in relation to the most common internal diseases occurring in adults and their complications	W1, W2, W3, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3	seminar

Course advanced

Teaching methods:

case study, high fidelity simulation

Activities	Examination methods	Credit conditions
seminar	practical examination, group assessment	Above 65% on practical examination, positive group assesment.

Entry requirements

Umiejętność wykonywania badania fizykalnego Umiejętność zbierania wywiadu lekarskiego

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Heart failure: prevention, diagnostics and treatment

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Understanding epidemiology and pathophysiology of heart failure
C2	Learning about diagnosis of heart failure.
C3	Learning about indications for additional tests in patients with heart failure and how to interpret their results.
C4	Understanding therapy of heart failure.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	environmental and epidemiological determinants of the most frequent diseases	E.W1	multiple choice test

W2	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.W7	multiple choice test
W3	the role of medical rehabilitation and methods used in it	E.W31	multiple choice test
Skills – Student can:			
U1	carry out a medical history with an adult patient	E.U1	multiple choice test
U2	conduct a full and targeted physical examination of an adult patient	E.U3	multiple choice test
U3	perform differential diagnosis of the most common diseases of adults and children	E.U12	multiple choice test
U4	recognize immediate life-threatening conditions	E.U14	multiple choice test
U5	plan diagnostic, therapeutic and prophylactic procedures	E.U16	multiple choice test

U6	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	multiple choice test
U7	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	multiple choice test
U8	qualify the patient for home and hospital treatment	E.U20	multiple choice test
U9	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	multiple choice test
U10	propose a rehabilitation program for the most common diseases	E.U23	multiple choice test
U11	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	multiple choice test
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	multiple choice test
K2	to be guided by the well-being of a patient	O.K2	multiple choice test
K3	respect medical confidentiality and patients' rights	O.K3	multiple choice test
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	multiple choice test
K5	promote health-promoting behaviors	O.K6	multiple choice test
K6	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	multiple choice test

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation for test	10
preparation for classes	10
conducting literature research	5
Student workload	**Hours** 55
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Epidemiology of heart failure Causes of heart failure Pathogenesis of heart failure symptoms Types of heart failure Prognosis in heart failure	W1, W2, U11, U8, K2, K3, K4, K5, K6	seminar
2.	1. Ischemic disease - as a cause of heart failure 2. Heart defects as a cause of heart failure	W2, W3, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3	classes
3.	1. Myocarditis as a cause of heart failure 2. Non-cardiac causes of heart failure	W1, W2, U1, U10, U4, U5, U6, U7, K1, K2, K3, K4, K5, K6	classes
4.	Prevention of heart failure: Epidemiology of risk factors Behavioral risk factors for the development of heart failure - diagnostics and treatment	W1, W2, W3, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6	seminar
5.	Hypertension as a cause of heart failure - management of hypertension	W2, U1, U2, U3, U4, U5, K1, K2, K3, K4, K5, K6	classes
6.	Management of dyslipidemia Management of diabetes	W2, U1, U2, U3, U5, K2, K3, K4	classes
7.	Diagnosis of heart failure: Symptoms and signs of heart failure Imaging in heart failure Biomarkers of heart failure	W2, W3, U10, U11, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6	seminar
8.	Echocardiography in the diagnosis and evaluation of the effectiveness of heart failure treatment Computed tomography and magnetic resonance imaging in the diagnosis of heart failure	W1, W2, W3, U10, U11, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5, K6	classes
9.	Invasive procedures in heart failure diagnosis - coronary angiography, fractional flow reserve, endomyocardial biopsy. Indications, contraindications.	W2, U4, U5, U7, U8, U9, K1, K2, K3, K4, K6	classes
10.	Conservative treatment of heart failure Algorithm of heart failure management Prognosis of heart failure patients	W2, U7, U8, U9, K1, K2, K3, K4, K5, K6	seminar
11.	Diet in the treatment of heart failure: calories, sodium, potassium, and microelements intake. Physical activity in people with heart failure. Indications and contraindications for cardiac rehabilitation.	W3, U10, U5, K1, K2, K3, K4, K5	classes
12.	Pharmacological treatment of heart failure - drug classes, indications, contraindications, effects on symptoms and prognosis.	W2, U5, U6, U7, U8, K1, K2, K3, K4, K5	classes
13.	Surgical treatment of heart failure: Coronary angioplasty procedures - indications, results, long-term prognosis Mechanical support of the circulatory system Heart transplantation - indications, contraindications	W2, W3, U4, U5, U7, U8, U9, K1, K2, K3, K4, K5	seminar

14.	Surgical treatment of aortic stenosis Surgical treatment of mitral valve regurgitation	W2, U7, U8, K1, K2, K3, K4, K5	classes
15.	Resynchronizing therapy - indications, contraindications, results Cardioverter / defibrillator - indications, contraindications Surgical treatment of arrhythmias in patients with heart failure	W2, U7, K1, K2, K3, K4, K5	classes

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, demonstration, discussion, case study method, situation method, practical classes

Activities	Examination methods	Credit conditions
seminar	multiple choice test	At least 60% of the points on the exam are required Attendance at classes is required
classes	multiple choice test	At least 60% of the points on the exam are required Attendance at classes is required

Entry requirements

Cardiovascular physiology, cardiovascular pathophysiology, pharmacology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Advanced technologies in treatment of diabetes

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Becoming acquainted with modern technologies in the treatment of diabetes
C2	Acquiring the ability to read and analyze data from insulin pumps, glucometers and systems for continuous glucose monitoring
C3	Acquiring the ability to analyze data from the insulin pump of a patient with gestational diabetes
C4	To acquaint the student with artificial pancreas and DIY systems

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	written examination
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	booklet of practical skills
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	booklet of practical skills
U3	carry out a medical history with an adult patient	E.U1	classroom observation
U4	plan diagnostic, therapeutic and prophylactic procedures	E.U16	booklet of practical skills
U5	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	booklet of practical skills
U6	select appropriate physical activity in the developmental period of children and adolescents and propose health training in adulthood, both in health and disease	E.U40	classroom observation
U7	qualify children and young people for physical education and sports, and adults for appropriate physical activity. Interprets the stress tests	E.U41	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	promote health-promoting behaviors	O.K6	classroom observation
K4	use objective sources of information	O.K7	classroom observation
K5	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

Calculation of ECTS points

Activity form	**Activity hours***

seminar	10
classes	20
case analysis	10
preparation for classes	10
preparation for examination	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Unmet needs in typ1 diabetes managment. New, CGM based measure of glycemic control	W1, U2, U3, U4, U6, U7, K1, K2, K3, K4, K5	seminar
2.	Insulin pump therapy and systems of continous glucose monitoring: clinical aplications. Which device for whom and when	U3, U5, K3	seminar
3.	The managment of diabetes with personal insulin pumps during pregnancy	U1, U6, U7, K3	seminar
4.	Exercise and sport when on personal insulin pump	U4	seminar
5.	Towards closed loop technologies: available systems, future perspectives	U1, U4	seminar
6.	Presenting Insulin Pump Therapy to your patients, Understanding advantages and disadvantages of insulin pump therapy, When your patient chooses the pump	U1, U2, U3, U4, U7	classes
7.	Insert infusion set, Review insertion technique, tips on inserting infusion set, Estimating for Starting Insulin Pump Parameters	W1, U1, U2, U3, U4, U6, K1, K2, K3, K4, K5	classes
8.	Fine-tuning the overnight Basal rate Worksheet, Testing the overnight basal rate, Testing the daytime basal rate worksheet	U4, U5, K1, K2, K3, K4, K5	classes
9.	Fine-tuning the meal bolus worksheet, Bolus calculator function, Carbohydrate counting, Calculating insulin-to-carbohydrate ratio Calculating insulin for high blood glucose correction	U1, U3, U4, K1, K2, K3, K4, K5	classes
10.	Testing the Correction Bolus, Extended/Dual Boluses, fat-protein exchangers, food mobile aplications	U1, U3, U4, U5, K1, K2, K3, K4, K5	classes

11.	Troubleshooting for Insulin Pump Patients • Living with pump – sleep, shower, sex • Hyperglycemia & ketones – when & how to check • Travel • Hypoglycemia – causes and treatment • Temporary Removal/Disconnect • managing illness	W1, U1, U3, U4, K1, K2, K3, K4, K5	classes
12.	Blood glucose pattern interpretation, CGM systems, interpreting SAP data, case studies	W1, U1, U3, U4, U6, K1, K2, K3, K4, K5	classes
13.	Pregnancy and pumps - case studies	U1, U3, U4, K1, K2, K3, K4, K5	classes
14.	Data downloading and interpretation, DIY systems,	U1, U3, U4, K1, K2, K3, K4, K5	classes
15.	Data downloading and interpretation part 2, Mobile Diabetes App	U3, U4, K2	classes

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, discussion, computer room, seminar

Activities	Examination methods	Credit conditions
seminar	written examination, classroom observation	active participation in all classes
classes	booklet of practical skills	attendance

Entry requirements

knowledge of diabetes pathophysiology, of insulin action

From symptoms to diagnosis - topographic diagnostics in Neurology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 30	2.0

Goals

C1	The goal of the course is to make students konwledgable of neurological symptoms and signs and their usefulness in localizing lesions within nervous system. Such a knowledge is a preliminary requirement for the precise and efficient diagnosis of neurological disease. This course consolidates and expands information provided during the regular neurology course and should be extremely helpful for students who plan their professional career in the fields of neurology, neurosurgery or psychiatry.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basic neurological symptom syndromes	E.W13	multiple choice test

W2	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	E.W14	multiple choice test
Skills – Student can:			
U1	carry out a medical history with an adult patient	E.U1	multiple choice test
U2	conduct a full and targeted physical examination of an adult patient	E.U3	multiple choice test
U3	plan diagnostic, therapeutic and prophylactic procedures	E.U16	multiple choice test
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	multiple choice test
K2	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	multiple choice test

Calculation of ECTS points

Activity form	**Activity hours***
seminar	30
preparation for classes	15
preparation for examination	15
Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	History-taking in neurology	U1	seminar

2.	Neurological examination	W1, U2, K1	seminar
3.	Non-neurological signs of neurological disorders	U2, K1, K2	seminar
4.	Disorders of vision and ocular movements	W1, W2, U2, U3, K1, K2	seminar
5.	Disorders of smell, taste, hearing and balance	W1, W2, U2, U3, K1, K2	seminar
6.	Disorders of speech and swallowing	W1, W2, U2, U3, K1, K2	seminar
7.	Weakness	W1, W2, U2, U3, K1, K2	seminar
8.	Disorders of reflexes and muscle tone	W1, W2, U2, U3, K1, K2	seminar
9.	Disorders of coordination	W1, W2, U2, U3, K1, K2	seminar
10.	Disorders of gait	W1, W2, U2, U3, K1, K2	seminar
11.	Disorders of somatic sensation	W1, W2, U2, U3, K1, K2	seminar
12.	Disorders of higher cortical functions	W1, W2, U2, U3, K1, K2	seminar
13.	Disorders of consciousness and awareness	W1, W2, U2, U3, K1, K2	seminar

Course advanced

Teaching methods:

discussion, educational film, educational game, case study method, presentation, seminar

Activities	Examination methods	Credit conditions
seminar	multiple choice test	Credit is given to the student who has attended all classes and passed multiple choice test at the end of the course.

Entry requirements

- Students are required to attend all classes
- It is assumed that all students had attended neurology course and passed exam in neurology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Practice of echocardiography

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Competence in echocardiography at basic level. Competence in the assessment of hemodynamic status and CV risk of the patients based on echocardiography.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	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.W7	practical examination
Skills – Student can:			
U1	recognize immediate life-threatening conditions	E.U14	practical examination
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	practical examination

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10

classes	20
preparation for classes	10
information collection	10
preparation for examination	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Normal and pathologic values of measurements in echocardiography.	W1	classes, seminar
2.	Competence in the assessment of hemodynamic status and CV risk of the patients based on echocardiography	U1, K1	classes, seminar

Course advanced

Teaching methods:

clinical classes, seminar

Activities	Examination methods	Credit conditions
seminar	practical examination	Echocardiography performing at basic level.
classes	practical examination	Echocardiography performing at basic level.

Additional info

Obligatory presence during the first day, 1 day off only possible during the next days.

Entry requirements

Heart anatomy, circulatory system physiology, internal medicine background.
Presence during the first day obligatory, one day off only during the next days possible.

The role of genetics in modern prenatal diagnosis and in reproduction failure

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Acquiring information regarding: • breeding failures, • indications for prenatal diagnosis in the context of specific clinical cases, • Advantages and disadvantages of NIPT tests in the context of modern prenatal diagnostics • Preimplantation diagnostics • Conducting differential diagnosis of a newborn baby (in the context of genetic diseases) • Modern genetic diagnostics technologies • Chromosome aberrations and the most common monogenic diseases diagnosed in newborns
C2	Acquiring skills regarding: • Diagnosis of reproductive failures, • Indications for prenatal diagnosis in the context of specific clinical cases, • Construction and interpretation of pedigrees, • Clinical interpretation of results obtained by classical and molecular cytogenetics techniques in reproductive failures, • Clinical interpretation of results obtained by classical and molecular cytogenetics techniques in prenatal diagnosis, • Preimplantation diagnostics • Conducting differential diagnosis of a newborn baby (in the context of genetic diseases) • Methods of modern genetic diagnostics and the most common monogenic diseases diagnosed in newborns

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basic methods of fetal diagnostics and therapy	E.W5	group assessment
W2	the causes, symptoms, principles of diagnosis and therapeutic management of the most common hereditary diseases	E.W37	group assessment, clinical case presentation
W3	symptoms and course of diseases	O.W2	group assessment, clinical case presentation
W4	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	group assessment
W5	theoretical and practical basics of laboratory diagnostics	E.W40	group assessment
W6	the types of biological materials to be used for laboratory diagnosis and the rules for the collection of test material	E.W39	group assessment
Skills – Student can:			
U1	collect and retain test material for use in laboratory diagnostics	E.U28	group assessment
U2	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	clinical case presentation
U3	plan diagnostic, therapeutic and prophylactic procedures	E.U16	clinical case presentation
U4	assess the condition of the newborn on the Apgar scale and its maturity, and examine neonatal reflexes	E.U8	group assessment
U5	perform differential diagnosis of the most common diseases of adults and children	E.U12	clinical case presentation
U6	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	group assessment
U7	plan the diagnostic procedure and interpret its results	O.U3	clinical case presentation
U8	identify medical problems and prioritize medical management	O.U1	clinical case presentation
U9	communicate and share knowledge with colleagues in a team	O.U8	clinical case presentation
U10	critically evaluate the results of scientific research and adequately justify the position	O.U9	clinical case presentation
U11	carry out a medical history with an adult patient	E.U1	group assessment
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	group assessment
K2	to be guided by the well-being of a patient	O.K2	group assessment
K3	respect medical confidentiality and patients' rights	O.K3	group assessment

K4	use objective sources of information	O.K7	group assessment, clinical case presentation

Calculation of ECTS points

Activity form	Activity hours*
seminar	10
classes	20
preparation for classes	20
preparation of multimedia presentation	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Diagnosis of reproductive failures	W3, W5, W6, U1, U10, U11, U2, U3, U6, U7, U8, U9, K1, K3, K4	classes, seminar
2.	Construction and interpretation of pedigrees	W2, W3, U11, U3, U6, K1	classes
3.	Clinical interpretation of results obtained by classical and molecular cytogenetics techniques in prenatal diagnosis and reproductive failure	W2, W3, W4, W5, W6, U1, U10, U2, U3, U5, U6, U7, U8, U9, K1, K2, K3, K4	classes, seminar
4.	Advantages and disadvantages of NIPT tests in the context of modern prenatal diagnostics	W1, W2, W5, W6, U1, U10, U11, U2, U3, U6, U7, K1, K3, K4	classes, seminar
5.	Contemporary preimplantation diagnostics	W1, W4, W5, W6, U1, U10, U11, U3, U6, U7, U9, K1, K2, K3, K4	seminar
6.	Differential diagnosis of the newborn baby (in the context of genetic diseases)	W2, W3, W4, U2, U3, U4, U5, U6, U8, K1, K2, K3, K4	classes, seminar
7.	Chromosomal aberrations and the most common monogenic disorders diagnosed in newborns	W2, W3, U3, U4, U5, U7, U8, U9, K2, K3, K4	classes, seminar

Course advanced

Teaching methods:

case study, problem solving method, case study method, group work, assignments solving, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	group assessment	evaluation of class attendance
classes	clinical case presentation	presentation of clinical case by student

Entry requirements

Completion of preeliminary modules: • Gynecology and obstetrics 1/4 • Gynecology and obstetrics 2/4 • Clinical genetics • Pediatrics 1/4 • Pediatrics 2/4

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Systemic vasculitis

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Transfer of knowledge in the field of pathophysiology, symptoms, diagnosis and treatment of systemic vasculitis
C2	To familiarize students with the symptoms and course of systemic vasculitis and methods for assessing severity of the course.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	classroom observation

W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation
W3	environmental and epidemiological determinants of the most frequent diseases	E.W1	classroom observation
W4	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.W7	classroom observation
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	classroom observation
U2	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U3	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U4	carry out a medical history with an adult patient	E.U1	classroom observation

U5	propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy	E.U18	classroom observation
U6	plan specialist consultations	E.U32	classroom observation
U7	maintain patient's medical records	E.U38	classroom observation
U8	understand the importance and organization of support groups for chronic patients and their families, and Balint groups for medical staff	E.U51	classroom observation
Social competences – Student is ready to:			
K1	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K2	use objective sources of information	O.K7	classroom observation
K3	formulate conclusions from own measurements or observations	O.K8	classroom observation
K4	to be guided by the well-being of a patient	O.K2	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation for classes	10
case analysis	10
preparation for classes	5
preparation for examination	5

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Clinical, epidemiological and laboratory characteristics of systemic vasculitis	W1, W2, W3, W4	seminar

2.	Characteristics of individual clinical units within systemic vasculitis part 1: giant cell arteritis, Goodpasture's disease, Henoch and Schoenlein purpura,	W4	seminar
3.	Characteristics of individual clinical units within systemic vasculitis part 2: ANCA-associated systemic vasculitis: granulomatosis with vasculitis (Wegener), microscopic vasculitis, eosinophilic granulomatosis with vasculitis (Churg-Strauss syndrome).	W4	seminar
4.	Assessment of the activity and effects of systemic vasculitis associated with the presence of ANCA using BVAS (Birmingham Vasculitis Activity Score) and VDI (Vasculitis Damage Index) scales	W1, W2, U2, U4, U7, K2	classes, seminar
5.	Rules for the treatment of systemic vasculitis: groups of drugs used, treatment regimens	W2, U1, U3, U5, U6, U8, K1, K3, K4	classes, seminar
6.	Registers - the basic method of scientific research in systemic vasculitis	W1, W3, W4, U4, U7, K1, K2	classes, seminar

Course advanced

Teaching methods:

case study, clinical classes, computer classes, discussion, problem solving method, seminar

Activities	Examination methods	Credit conditions
seminar	classroom observation	udział w zajęciach i zaliczenie ćwiczeń
classes	classroom observation	udział w zajęciach

Entry requirements

Knowledge about: -general information about autoimmunity and hypersesitivity - anatomy, physiology and pathophysiology of the upper and lower respiratory tract, renal system - principles of medical history taken and physical examination, - basics of psychology and medical ethics,

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Ultrasound in pediatrics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification No ISCED cat. found	**Standard group** E. Clinical non-procedural medical disciplines

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Basic theoretical knowledge and practical skills in pediatric ultrasound.
C2	Use of ultrasound as a tool in daily, bedside, point of care pediatric treatment.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the most common life-threatening conditions in children and the rules of conduct in these conditions	E.W6	multiple choice test

W2	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	E.W3	clinical case presentation, multiple choice test
Skills – Student can:			
U1	recognize immediate life-threatening conditions	E.U14	classroom observation
U2	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, clinical case presentation
Social competences – Student is ready to:			
K1	formulate conclusions from own measurements or observations	O.K8	classroom observation

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation for classes	20
preparation for test	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Basics of technical, physical and equipment background in ultrasound.	W1, W2	seminar
2.	Transfonntanelle brain ultrasound: examples of normal and pathological cases.	W1, W2, U1, U2, K1	classes, seminar
3.	Lung ultrasound: examples of normal and pathological cases	W1, W2, U1, U2, K1	classes, seminar
4.	Screening echocardiography: examples of normal and pathological cases.	W1, W2, U1, U2, K1	classes, seminar
5.	Abdominal ultrasound: examples of normal and pathological cases.	W1, W2, U1, U2, K1	classes, seminar
6.	Hip joint: examples of normal and pathological cases	W2, U2, K1	classes, seminar

Course advanced

Teaching methods:

clinical classes, seminar

Activities	Examination methods	Credit conditions
seminar	multiple choice test	written test
classes	classroom observation, clinical case presentation	Practical ultrasound exam: randomly chosen part of the body. Module passing requires active participation in classes

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

From conservative nephrology to transplantology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Understanding the basics of the pathophysiology, clinical manifestations, and management of kidney diseases

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	clinical case presentation
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	clinical case presentation

Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	clinical case presentation
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	clinical case presentation
U3	plan the diagnostic procedure and interpret its results	O.U3	clinical case presentation
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	clinical case presentation
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	classroom observation, clinical case presentation
U6	inspire the learning process of others	O.U6	clinical case presentation
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, clinical case presentation
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	clinical case presentation
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
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

Calculation of ECTS points

Activity form	**Activity hours***

seminar	10
classes	20
case analysis	30

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 50

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Seminars 1. Seminar 1: Acid-base, fluid and electrolyte disorders. Acute kidney injury. 2. Seminar 2: Chronic kidney disease (CKD). 3. Seminar 3: Acute and chronic glomerulonephritis. 4. Seminar 4: Acute and chronic tubulointerstitial nephritis. 5. Seminar 5: Renal replacement therapies: peritoneal dialysis, haemodialysis, kidney transplantation. Bedside teaching 1. Acute kidney injury - diagnosis and treatment. Hepatorenal syndrome. Cardiorenal syndrome. Contrast - induced nephropathy. 2. Kidney imaging techniques. Kidney biopsy. 3. Hereditary renal disorders: polycystic and acquired cystic diseases, Alport’s syndrome, medulary cystic disease. 4. Infection-associated glomerulonepritis (GN): viral hepatitis-associated GN, HIV-associated kidney disorders, streptococcal - and staphylococcal-related GN. 5. Onconephrology. 6. Primary glomerular disorders: minimal change disease, FSGS, membranous nephropathy, membranoproliferative GN. 7. Secondary glomerular disorders: lupus nepritis, vasculitides. 8. Diabetic kidney disease. 9. Acid-base and electrolyte disorders. 10. Posttransplant infection and malignancies. Primary care of the kidney transplant recipient. 11. Continuous renal replacement therapy. 12. Primary and secondary hypertension: diagnostics and treatment. Hypertensive emergencies. 13. Drug dosing in patients with chronic kidney disease. Nutrition in CKD. 14. Paliative care in nephrology.	W1, W2, U1, U2, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

Course advanced

Teaching methods:

case study, textual analysis, brainstorm, clinical classes, discussion, seminar

Activities	Examination methods	Credit conditions
seminar	clinical case presentation	Participation in all seminars and clinical duties is required. The condition for passing is attendance of all classes. A formal-end-of-rotation test including 20 questions will require a pass rate of 60%.
classes	classroom observation, clinical case presentation	Opis wybranego przez asystenta przypadku klinicznego w zakresie diagnostyki i leczenia z możliwością późniejszej publikacji w dostępnych czasopismach nefrologicznych.

Entry requirements

Understanding the basics of the pathophysiology, clinical manifestations, and management of kidney diseases

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Emergency in allergology and clinical immunology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 13, classes: 17	2.0

Goals

C1	Acquiring knowledge about life-threatening conditions in allergology
C2	Recognition the causes, symptoms, classification, diagnostic methods, and treatment of hypersensitivity reactions, including anaphylaxis
C3	Comprehension of severe asthma exacerbation
C4	Knowledge of pathology, diagnosis and treatment of severe drug hypersensitivity reactions

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods

Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	classroom observation, oral credit
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	classroom observation, oral credit
W3	environmental and epidemiological determinants of the most frequent diseases	E.W1	classroom observation, oral credit
W4	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.W7	classroom observation, oral credit
W5	possibilities and limitations of laboratory tests in emergency situations	E.W41	classroom observation, oral credit
Skills – Student can:			

U1	identify medical problems and prioritize medical management	O.U1	classroom observation, group assessment, oral credit
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation, group assessment, oral credit
U3	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, group assessment, oral credit
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, oral credit
U5	carry out a medical history with an adult patient	E.U1	classroom observation
U6	conduct a full and targeted physical examination of an adult patient	E.U3	classroom observation
U7	perform differential diagnosis of the most common diseases of adults and children	E.U12	classroom observation, group assessment
U8	recognize immediate life-threatening conditions	E.U14	classroom observation, group assessment, oral credit
U9	plan diagnostic, therapeutic and prophylactic procedures	E.U16	classroom observation, group assessment, oral credit
U10	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	classroom observation, group assessment, oral credit
U11	qualify the patient for home and hospital treatment	E.U20	classroom observation, group assessment, oral credit
U12	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	classroom observation, group assessment, oral credit
U13	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, group assessment

U14	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, group assessment
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation, group assessment
K2	respect medical confidentiality and patients' rights	O.K3	classroom observation, group assessment
K3	use objective sources of information	O.K7	classroom observation, group assessment
K4	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation, group assessment
K5	formulate conclusions from own measurements or observations	O.K8	classroom observation, group assessment

Calculation of ECTS points

Activity form	**Activity hours***
seminar	13
classes	17
preparation for classes	10
preparation for colloquium	8
conducting literature research	5
Student workload	**Hours** 53
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 17

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	Types of hypersensitivity reactions and their main causes. Clinical course of hypersensitivity reactions. General principles for the treatment of hypersensitivity reactions. Characteristics of life-threatening state in the course of hypersensitivity reactions. Further management of a patient who has undergone a hypersensitivity reaction - diagnostic and prophylactic recommendations. Practical performance and interpretation of skin prick and intradermal tests, as well as patch skin tests. Interpretation of laboratory test results of blood total IgE and antigen specific IgE. Significance and interpretation of the nasal mucosa cytology. General principles of allergen immunotherapy.	W1, W2, W3, W5	classes, seminar
2.	Anaphylaxis - causes, symptoms, degrees of severity, and principles of treatment. Further management of a patient who has undergone an anaphylactic reaction.	W1, W2, U1, U11, U12, U14, U2, U3, U4, U5, U6, U8, U9, K1, K2, K3, K4, K5	classes, seminar
3.	Allergic and non-allergic hypersensitivity to the most commonly used medications. Intolerance and allergy to local anesthetics - facts and myths. Perioperative anaphylaxis.	W1, W2, W5, U1, U10, U11, U12, U14, U2, U3, U4, U5, U6, U8, U9, K1, K2, K3, K4, K5	classes, seminar
4.	Severe asthma exacerbation - prevention and treatment. New recommendations for the treatment of severe asthma. Performing and interpretation of spirometry, bodypletysmography and measurement of diffusing capacity for carbon monoxide. Peak expiratory flow (PEF) measurements - performance, interpretation and practical limitations. Acute and chronic respiratory failure.	W1, W2, W3, W4, W5, U1, U10, U11, U12, U13, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar
5.	Macrophage activation syndrome (MAS), as a unique type of hypersensitivity reaction in terms of the innate immune system function.	W1, W2, W3, W4, W5, U1, U10, U11, U12, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar
6.	Idiopathic thrombocytopenic purpura (ITP), thrombotic thrombocytopenic purpura (TTP), post-heparin thrombocytopenia - three different examples of thrombocytopenia resulting from activation of various mechanisms of allergic hypersensitivity	W1, W2, W3, W4, W5, U1, U10, U11, U12, U2, U3, U4, U5, U6, U8, K1, K2, K3, K4, K5	classes, seminar

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, laboratories (labs), demonstration, discussion, case study method, presentation, group work, seminar, PBL Problem Based Learning, practical classes

Activities	Examination methods	Credit conditions
seminar	oral credit	oral exam
classes	classroom observation, group assessment	observation of student work, group assessment

Entry requirements

The student is obliged to participate in 4 courses (from 5 planned)
Knowledge is also required: - basics of immunology - types of hypersensitivity reactions, allergic hypersensitivity,

anaphylaxis, autoimmune reactions - physiology and pathology of the respiratory system - principles of subjective and physical examination - basics of psychology and medical ethics

Nervous system diseases in children and neurophysiology methods in diagnostics

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** E. Clinical non-procedural medical disciplines
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Among the most important goals there is to broaden the Students' knowledge of early detection of developmental nervous system disorders, diagnostics and therapy of acute and chronic central and peripheral nervous system diseases as well as life threatening conditions in neuropediatrics.

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 credit
W2	symptoms and course of diseases	O.W2	oral credit
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral credit
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 credit
W5	environmental and epidemiological determinants of the most frequent diseases	E.W1	oral credit
W6	the principles of nutrition of healthy and sick children, including breastfeeding, preventive vaccination and child health monitoring	E.W2	oral credit
W7	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases of children: (1) rickets, tetanus, convulsions, (2) heart defects, myocarditis, endocarditis, pericarditis, cardiomyopathy, arrhythmia, heart failure, hypertension, syncope, (3) acute and chronic diseases of the upper and lower airways, congenital defects of the respiratory system, tuberculosis, cystic fibrosis, asthma, allergic rhinitis, urticaria, anaphylactic shock, angioedema, (4) anemia, hemorrhagic diatheses, conditions of bone marrow failure, pediatric neoplastic diseases, including solid tumors typical of childhood, (5) acute and chronic abdominal pain, vomiting, diarrhea, constipation, gastrointestinal bleeding, peptic ulcer disease, non-specific intestinal diseases, pancreatic diseases, cholestasis and liver diseases, and other acquired diseases and congenital defects of the digestive tract, (6) urinary tract infections, congenital anomalies of the urinary system, nephrotic syndrome, renal stones, acute and chronic renal failure, acute and chronic nephritis, systemic kidney diseases, urinary tract disorders, vesicoureteral reflux disease, (7) growing disorders, thyroid and parathyroid diseases, adrenal diseases, diabetes, obesity, disorders of puberty and gonadal functions, (8) cerebral palsy, encephalomyelitis, meningitis, epilepsy, (9) the most common infectious diseases of childhood, (10) genetic syndromes, (11) diseases of connective tissue, rheumatic fever, juvenile arthritis, systemic lupus, dermatomyositis	E.W3	oral credit
W8	issues of abused child and sexual abuse, mental retardation and behavioral disorders – psychoses, addictions, eating disorders and excretion in children	E.W4	oral credit
W9	the most common life-threatening conditions in children and the rules of conduct in these conditions	E.W6	oral credit
W10	basic neurological symptom syndromes	E.W13	oral credit

W11	causes, symptoms, principles of diagnosis and therapeutic management in the most common diseases of the nervous system, including: 1) headaches: migraines, tension headaches and headache syndromes and neuralgia of the nerve V, 2) cerebral vascular diseases, in particular stroke, 3) epilepsy, 4) infections of the nervous system, in particular meningitis, borreliosis, herpetic encephalitis, neurotransmission diseases, 5) dementia, in particular: Alzheimer's disease, frontal dementia, vascular dementia and other dementia syndromes, 6) basal ganglia diseases, Parkinson's disease in particular, 7) demyelinating diseases, multiple sclerosis in particular, 8) diseases of the neuromuscular system, lateral atrophic sclerosis and sciatic neuralgia in particular, 9) craniocerebral injuries, cerebral palsy in particular	E.W14	oral credit
W12	the concept of impairment and disability	E.W30	oral credit
W13	the role of medical rehabilitation and methods used in it	E.W31	oral credit
W14	rules of conduct in the event of the detection of an infectious disease	E.W33	oral credit
W15	Symptoms and rules for managing infectious diseases that are life-threatening	E.W50	oral credit
W16	indications and rules for performing lumbar puncture and assisting in the performance of the procedure	E.W54	oral credit
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	oral credit
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	oral credit
U3	plan the diagnostic procedure and interpret its results	O.U3	oral credit
U4	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	oral credit
U5	plan own learning activities and constantly learn in order to update own knowledge	O.U5	oral credit
U6	inspire the learning process of others	O.U6	oral credit
U7	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	oral credit
U8	communicate and share knowledge with colleagues in a team	O.U8	oral credit
U9	critically evaluate the results of scientific research and adequately justify the position	O.U9	oral credit
U10	carry out a medical interview with the child and his or her family	E.U2	oral credit
U11	carry out a physical examination of a child of all ages	E.U4	oral credit
U12	assess the general condition, state of consciousness and awareness of the patient	E.U7	oral credit

U13	perform differential diagnosis of the most common diseases of adults and children	E.U12	oral credit
U14	evaluate and describe the somatic and mental state of the patient	E.U13	oral credit
U15	recognize immediate life-threatening conditions	E.U14	oral credit
U16	recognize the condition after drinking alcohol, after using drugs and other substances	E.U15	oral credit
U17	plan diagnostic, therapeutic and prophylactic procedures	E.U16	oral credit
U18	analyze the potential adverse reactions of individual medicines and the interactions between them	E.U17	oral credit
U19	make a functional assessment of a patient with a disability	E.U22	oral credit
U20	interpret the results of laboratory tests and identify the causes of abnormalities	E.U24	oral credit
U21	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	oral credit
U22	plan specialist consultations	E.U32	oral credit
U23	maintain patient's medical records	E.U38	oral credit
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	oral credit
K2	to be guided by the well-being of a patient	O.K2	oral credit
K3	respect medical confidentiality and patients' rights	O.K3	oral credit
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	oral credit
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral credit
K6	promote health-promoting behaviors	O.K6	oral credit
K7	use objective sources of information	O.K7	oral credit
K8	formulate conclusions from own measurements or observations	O.K8	oral credit
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	oral credit
K10	formulate opinions on the various aspects of the professional activity	O.K10	oral credit
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	oral credit

Calculation of ECTS points

Activity form	Activity hours*
seminar	10
classes	20
preparation for classes	10
information collection	10
case analysis	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	The neurological examination of infants and older children.	W1, W10, W11, W12, W13, W14, W15, W16, W2, W3, W4, W5, W6, W7, W8, W9	classes, seminar
2.	The clinical and elektrophysiological methods of use in neuropediatrics.	W1, W10, W11, W12, W13, W14, W15, W16, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U2, U20, U21, U22, U23, U3, U4, U5, U6, U7, U8, U9, K1, K10, K11, K2, K3, K4, K5, K6, K7, K8, K9	classes, seminar

Course advanced

Teaching methods:

case study, clinical classes, demonstration, discussion, group work, seminar

Activities	Examination methods	Credit conditions
seminar	oral credit	Active presence.
classes	oral credit	Active presence in all proposed forms of studying, presentation of a case study, positively graded oral exam.

Additional info

Teaching methods: theoretical introduction, practicing the skills at the Department of Pediatric Neurology and Laboratories.

Entry requirements

A Student should be familiar with the knowledge and skills required by the pediatric course

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Advanced Life Support

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** classes: 20, e-learning: 10	2.0

Goals

C1	Familiarisation with the Advanced Life Support Algorythm.
C2	Care of the deteriorating patient. Prevention of cardiac arrest.
C3	Recognition and treatment of reversible causes of cardiac arrest 4Ts and 4 Hs.
C4	Special circumstances: Asthma, Anaphylaxis, Pregnancy, Toxins, Hyperkalaemia, Hypovolaemia
C5	Post cardiac arrest care
C6	Non-technical skills in cardiopulmonary resuscitation

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	guidelines for cardiopulmonary resuscitation of newborns, children and adults	F.W7	written examination
Skills – Student can:			
U1	identify life-threatening conditions that require immediate medical intervention	O.U2	classroom observation
U2	plan the diagnostic procedure and interpret its results	O.U3	classroom observation
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation
U4	communicate and share knowledge with colleagues in a team	O.U8	classroom observation
U5	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation
U6	operate according to the algorithm of advanced resuscitation activities	F.U11	classroom observation
U7	perform basic resuscitation procedures using an automatic external defibrillator and other emergency procedures and first aid	F.U10	classroom observation
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	classroom observation
K2	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation
K3	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

Calculation of ECTS points

Activity form	Activity hours*
classes	20
e-learning	10
preparation for classes	25
Student workload	**Hours** 55
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Cardiac arrest teaching simulation	W1, U1, U2, U3, U4, U5, U6, U7, K1, K2, K3	classes
2.	Advanced Life Support Algorythm	W1, U4, U6	e-learning

Course advanced

Teaching methods:

case study, classes in simulated conditions, discussion, seminar, simulation, lecture, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
classes	classroom observation	Active participation
e-learning	written examination	MCQ, Cardiac Arrest Scenario TEST

Additional info

Entry requirements

Knowlegde:
Basic Life Support algorythm. Advanced Life Support algorythm. Peri-arrest arythmias.
Skills:
ABCDE approach, Cardiopulmonary resuscitation (BLS).

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Practical aspects of surgery in children

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 6, seminar: 8, classes: 16	2.0

Goals

C1	To familiarize students with practical aspects of surgical menagament in children.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the causes, symptoms, diagnostic and therapeutic management principles for the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age, including in particular: 1) acute and chronic abdominal diseases, 2) thoracic diseases, 3) diseases of extremities and head, 4) fractures of bones and injuries to organs	F.W1	clinical case presentation

W2	selected issues in the field of pediatric surgery, including traumatology and otorhinolaryngology, as well as acquired defects and diseases being indications for surgical treatment in children	F.W2	clinical case presentation
W3	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	clinical case presentation
W4	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	clinical case presentation
W5	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	clinical case presentation
Skills – Student can:			
U1	use basic surgical instruments	F.U2	classroom observation
U2	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	F.U1	classroom observation
U3	adhere to the principles of asepsis and antisepsis	F.U3	classroom observation
U4	manage a simple wound, put on and change a sterile surgical dressing	F.U4	classroom observation
U5	assist in typical urological procedures (diagnostic and therapeutic endoscopy of the urinary tract, lithotripsy, prostate puncture)	F.U24	classroom observation
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	group assessment
K2	promote health-promoting behaviors	O.K6	group assessment
K3	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	group assessment
K4	formulate conclusions from own measurements or observations	O.K8	group assessment
K5	to be guided by the well-being of a patient	O.K2	group assessment
K6	to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures	O.K1	group assessment

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	6
seminar	8

classes	16
preparation for classes	6
information collection	6
case analysis	6
consultations with lecturer	2
conducting literature research	2
practice	2
analysis of the research material	6

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 30

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Urology: Minimally invasive surgical techniques used in children	W1, W3, W4, W5	e-learning
2.	Physical examination, analysis of medical documentation and interpretation of the results of diagnostic tests. Conducting the diagnostic process, choosing the surgical treatment and preparing the patient for surgery.	W5, U1, U2, U3, U4, U5	classes
3.	Participation in surgical procedures, dealing with surgical instruments, preparation of the surgical field, principles of perioperative antibiotic prophylaxis and the elements postoperative care	W2, K5, K6	classes
4.	case presentation	K1, K2, K3, K4	seminar
5.	Neurosurgery: cranio-cerebral injuries - diagnostics and therapeutic management	W1, W5	e-learning
6.	General surgery: prevention of surgical diseases of childhood and special techniques used in emergency operations in children.	W1, W5	e-learning

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, classes in clinical skills room, demonstration, discussion, e-learning, educational film, case study method, presentation, group work, seminar, simulation, lecture, lecture with multimedia presentation, practical classes

Activities	Examination methods	Credit conditions
e-learning	group assessment	attendance
seminar	clinical case presentation	case presentation
classes	classroom observation	demonstrating skills to carry out the diagnostic process and to propose proper surgical treatment and prepare the patient for surgery

Entry requirements

Basic knowledge of physiology of newborns and children. Student is able to take the medical history and familiar with physical general examination.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Treatment of cancer of the abdominal cavity in elderly people

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences
Subject related to scientific research Yes	

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** e-learning: 4, seminar: 6, classes: 20	2.0

Goals

C1	To acquaint the student with the basic concepts of the surgical treatment in the older patients with cancer. This includes both knowledge (taking surgically directed medical history and physicall examination, preoperative evaluation of the older patient, planning of oncological treatment, postoperative follow-up) as well as basic manual skills (i.e. dressing change, suturing, suture and drains removal, insertion of the catheters and probes, etc.).

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 answer, clinical case presentation, oral credit
W2	symptoms and course of diseases	O.W2	oral answer, clinical case presentation, oral credit
W3	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral answer, clinical case presentation, oral credit
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 answer, clinical case presentation, oral credit
W5	methods of conducting scientific research	O.W5	oral answer, clinical case presentation, oral credit
W6	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	oral answer, clinical case presentation, oral credit
W7	principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation	F.W4	oral answer, clinical case presentation, oral credit
W8	postoperative treatment with analgesic therapy and postoperative monitoring	F.W5	oral answer, clinical case presentation, oral credit
W9	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	oral answer, clinical case presentation, oral credit
W10	the most common complications associated with anesthesia, sedation and perioperative period	F.W19	oral answer, clinical case presentation, oral credit
W11	the rules of qualification, what they consist of, how they take place and what are the possible complications and consequences of surgical procedures: a) removal of appendix, gallbladder b) excision of the thyroid, parathyroid, adrenal glands c) excision of part and entirety of the stomach, large intestine d) abdominal hernias, using synthetic mesh e) surgical treatment of obesity	F.W20	oral answer, clinical case presentation, oral credit
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	classroom observation, oral answer, oral credit
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	classroom observation, oral answer, oral credit
U3	communicate and share knowledge with colleagues in a team	O.U8	classroom observation, oral answer, oral credit
U4	communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient	O.U7	classroom observation, oral answer, oral credit
U5	critically evaluate the results of scientific research and adequately justify the position	O.U9	classroom observation, oral answer, oral credit

U6	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	F.U1	classroom observation, oral answer, oral credit
U7	adhere to the principles of asepsis and antisepsis	F.U3	classroom observation, oral answer, oral credit
U8	manage a simple wound, put on and change a sterile surgical dressing	F.U4	classroom observation, oral answer, oral credit
U9	monitor the patient's condition in the post-operative period based on basic vital parameters	F.U12	classroom observation, oral answer, oral credit
U10	can tie a single and surgical knot	F.U28	classroom observation, oral answer, oral credit
U11	insert a catheter into the bladder	F.U32	classroom observation, oral answer, oral credit
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, oral answer, clinical case presentation, oral credit
K2	to be guided by the well-being of a patient	O.K2	classroom observation, oral answer, clinical case presentation, oral credit
K3	respect medical confidentiality and patients' rights	O.K3	classroom observation, oral answer, clinical case presentation, oral credit
K4	use objective sources of information	O.K7	classroom observation, oral answer, clinical case presentation, oral credit
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	classroom observation, oral answer, clinical case presentation, oral credit

Calculation of ECTS points

Activity form	**Activity hours***
e-learning	4
seminar	6
classes	20
preparation for classes	5
preparation of multimedia presentation	15
conducting literature research	10

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30

Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Basic concepts of surgical oncogeriatrics.	W1, W11, W2, W3, W6, W9	e-learning
2.	Problem Based Learning - Rectal tumor	W1, W3, W5, W6, U1, U2, U3, U4, U5, K1, K2, K4, K5	classes, seminar
3.	Problem Based Learning - Pancreas tumor	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar
4.	Problem Based Learning - Liver tumor	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar
5.	Problem Based Learning - Gastric tumor	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar
6.	Problem Based Learning - Colon tumor	W1, W10, W11, W2, W3, W4, W5, W6, W7, W8, W9, U1, U10, U11, U2, U3, U4, U5, U6, U7, U8, U9, K1, K2, K3, K4, K5	classes, seminar

Course advanced

Teaching methods:

case study, brainstorm, classes / practicals, clinical classes, educational film, problem solving method, project method, case study method, group work, seminar, lecture, practical classes

Activities	Examination methods	Credit conditions
e-learning	oral credit	Attendance at all classes. The clinical case presentation prepared by the students.
seminar	oral answer, clinical case presentation	Attendance at all classes. The clinical case presentation prepared by the students.
classes	classroom observation, oral answer, clinical case presentation	Attendance at all classes. The clinical case presentation prepared by the students.

Entry requirements

Basic knowledge of general surgery and pathomorphology (especially in the area of the most common abdominal cancers). Knowledge of the principles of safty in the operating theater, surgical scrubing and assisting at the surgery.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Videoscope technique in surgical fields

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods Semester 9, Semester 10	**Examination** graded credit **Activities and hours** seminar: 10, classes: 20	**Number of ECTS points** 2.0

Goals

C1	To familiarize students with basic rules of application of minimal invasive surgery
C2	To familiarize students with ergonomics in surgery
C3	To familiarize students with safety precautions when using videoscopic equipment
C4	To familiarize students with independent work on laparoscopic trainer and with methods of monitoring of progress.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	practical examination, practical test
W2	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	practical examination, practical test
W3	the causes, symptoms, principles of diagnosis and therapeutic management of the most common diseases requiring surgical intervention, taking into account the distinctness of childhood age and in particular: a) diseases of arterial and venous vessels b) diseases of the urinary tract c) heart and blood vessel diseases d) craniofacial diseases, acute and chronic diseases of the central nervous system	F.W17	practical examination, practical test
W4	the rules of qualification, what they consist of, how they take place and what are the possible complications and consequences of surgical procedures: a) removal of appendix, gallbladder b) excision of the thyroid, parathyroid, adrenal glands c) excision of part and entirety of the stomach, large intestine d) abdominal hernias, using synthetic mesh e) surgical treatment of obesity	F.W20	practical examination, practical test
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	practical examination, practical test
U2	assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area	F.U1	practical examination, practical test
U3	use basic surgical instruments	F.U2	practical examination, practical test
Social competences – Student is ready to:			
K1	assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others	O.K11	practical examination, practical test

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
kształcenie samodzielne	10
preparation for classes	5
preparation for classes	10
Student workload	**Hours** 55

Workload involving teacher	Hours 30
Practical workload	Hours 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Basic rules of application of videoscopic techniques	W3	seminar
2.	Ergonomics in videoscopic surgery	W4	seminar
3.	Safety measures in minimally invasive surgery	W4, K1	seminar
4.	Utilization of laparoscopic trainer device	W2, U3	seminar
5.	Laparoscopic procedures: appendectomy, gastric surgery, bariatric surgery, cholecystectomy – steps and key aspects.	W3	seminar
6.	Basic skills: laparoscopic equipment	W2	classes
7.	Manual exercises	U2, U3	classes
8.	Laproscopic suturing	W1, U2, U3	classes
9.	Endocorporeal knot tying.	W1, U1, U2, U3	classes

Course advanced

Teaching methods:

classes / practicals, classes in simulated conditions, seminar

Activities	Examination methods	Credit conditions
seminar	practical examination	70% or more on basic laparoscopic drill test
classes	practical test	70% or more on basic laparoscopic drill test

Additional info

This course is about skill and knowledge in laparoscopic surgery. Main focus is to increase students' manual dexterity and familiarize them with most important concepts increasing the safety of laparoscopic surgery. Especially deisgned task trainers and series of exercises will gradually rise the students form a begginer level to intracorporeal knot tying. We will also explain major steps of most frequent surgical procedures.

Entry requirements

Passed Laboratory Trainiing of Surgical Skills.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Minimally invasive techniques in urology

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** elective
Disciplines Medical science	**Examination** graded credit
ISCED classification 0912 Medicine	**Standard group** F. Clinical procedural sciences

Periods	**Examination**	**Number of ECTS points**
Semester 9, Semester 10	graded credit **Activities and hours** seminar: 10, classes: 20	2.0

Goals

C1	Students will be introduced to minimally invasive techniques in Urology (endourology and laparoscopy).

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications	F.W3	oral credit
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	oral credit

W3	symptoms and course of diseases	O.W2	oral credit
W4	problems of modern imaging examinations, in particular: 1) radiological symptomatology of major diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) the indications, contraindications and preparation of the patient for particular types of imaging examination and contraindications for the use of contrast agents	F.W10	oral credit
Skills – Student can:			
U1	plan the diagnostic procedure and interpret its results	O.U3	oral credit
U2	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	oral credit
U3	plan own learning activities and constantly learn in order to update own knowledge	O.U5	oral credit
U4	communicate and share knowledge with colleagues in a team	O.U8	oral credit
U5	assist in typical urological procedures (diagnostic and therapeutic endoscopy of the urinary tract, lithotripsy, prostate puncture)	F.U24	oral credit
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	oral credit
K2	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	oral credit
K3	respect medical confidentiality and patients' rights	O.K3	oral credit
K4	to be guided by the well-being of a patient	O.K2	oral credit
K5	perceive and recognize own limitations and self-assessing educational deficits and needs	O.K5	oral credit

Calculation of ECTS points

Activity form	**Activity hours***
seminar	10
classes	20
preparation for classes	30

Student workload	**Hours** 60
Workload involving teacher	**Hours** 30
Practical workload	**Hours** 20

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Seminars Introduction to minimally invasive techniques in urology Classes Observing urological procedures in the operating theatre and/or live surgery transmitted to classroom.	W1, W2, W3, W4, U1, U2, U3, U4, U5, K1, K2, K3, K4, K5	classes, seminar
2.	Observing urological procedures in the operating theatre	U5, K4	classes

Course advanced

Teaching methods:

case study, brainstorm, clinical classes, discussion, educational film, presentation, seminar

Activities	Examination methods	Credit conditions
seminar	oral credit	Oral credit. Attendance list.
classes	oral credit	Oral credit. Attendance list.

Entry requirements

Credits in: anatomy, physiology, pathology

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Anesthesiology and Intensive Care - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 10	credit **Activities and hours** professional practice: 60	2.0

Goals

C1	1. Become acquainted with organization and procedures at the intensive care ward; 2. Broaden and systematize knowledge in the scope of physiopathology of life-threatening states resulting from injuries, severe infections, major operations etc.; 3. Become acquainted with treatment methods employed at intensive care ward, with particular emphasis placed on acquiring practical skills; 4. Become acquainted with monitoring of respiratory system, performing mechanical ventilation; 5. Become acquainted with monitoring of cardiovascularsystem and methods of pharmacological support thereof; 6. Evaluating patient’s state of consciousness, sedation at intensive care ward; 7. Becoming acquainted with infections contracted at intensive care ward and treatment of septic shock; 8. Become acquainted with methods of implementing and carrying out of extracorporeal therapies; 9. Ethical problems in intensive care; 10. Principles of record keeping at intensive care ward.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			

W1	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice
Skills – Student can:			
U1	identify medical problems and prioritize medical management	O.U1	booklet of practice
U2	identify life-threatening conditions that require immediate medical intervention	O.U2	booklet of practical skills, booklet of practice
U3	plan the diagnostic procedure and interpret its results	O.U3	booklet of practice
Social competences – Student is ready to:			
K1	to be guided by the well-being of a patient	O.K2	booklet of practice
K2	respect medical confidentiality and patients' rights	O.K3	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	60
Student workload	**Hours** 60
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**
1.	Life-threatening states resulting from injuries, severe infections, major operations etc.; Evaluating patient’s state of consciousness, sedation at intensive care ward;	W1	professional practice
2.	Treatment methods employed at intensive care ward, with particular emphasis placed on acquiring practical skills. Methods of implementing and carrying out of extracorporeal therapies	U1, U2, U3	professional practice
3.	Ethical problems in intensive care	K1, K2	professional practice

Course advanced

Teaching methods:

professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practical skills, booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Additional info

2 weeks (60 h) (5 days/week, 6 h/day); can be completed over summer vacation months only (July - August).
During that time, student must complete two on-call duties at each ward between 2 pm and 8 pm on the ward of student’s choosing. On the on-call days, active interns are excused from presence in the obligatory activities before 2pm.
Excused absence can be granted to the active intern only on submitting formal medical certificate. Illness longer than one week causes internship to be lengthened by the time of absence.

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Obstetrics and Gynecology - summer clerkship

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2020/21
Field of study Medical Program	**Realization year** 2024/25
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** credit
ISCED classification 0912 Medicine	**Standard group**

Period	**Examination**	**Number of ECTS points**
Semester 10	credit **Activities and hours** professional practice: 60	2.0

Goals

C1	Become acquainted with organization of obstetric admissions room, delivery room and postpartum ward;
C2	Deepening knowledge and practical skills in the field of gynecology and obstetrics

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	symptoms and course of diseases	O.W2	booklet of practice
W2	methods of diagnostic and therapeutic procedures appropriate for specific disease states	O.W3	booklet of practice
Skills – Student can:			

U1	identify medical problems and prioritize medical management	O.U1	booklet of practice
U2	plan the diagnostic procedure and interpret its results	O.U3	booklet of practical skills
U3	implement appropriate and safe therapeutic treatment and predict its effects	O.U4	booklet of practice
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	booklet of practice
K2	respect medical confidentiality and patients' rights	O.K3	booklet of practice

Calculation of ECTS points

Activity form	**Activity hours***
professional practice	60
Student workload	**Hours** 60
Workload involving teacher	**Hours** 60
Practical workload	**Hours** 60

* hour means 45 minutes

Study content

No.	**Course content**	**Subject's learning outcomes**	**Activities**

1.	1. Admit for delivery, prepare adequate records and perform labor prep activities; 2. Observe labor progress and keep labor progress records with consideration to most important parameters reflecting condition of mother and child; 3. Perform vaginal delivery under close supervision of midwife and obstetrician; 4. Participate in perineal suturing; 5. Assess placenta after delivery; 6. Learn to operate apparatuses available in maternity units; 7. Assist in cesarean sections; 8. Become acquainted with work organization in wards and units; 9. Learn principles of gynecological examination; 10. Discuss principles of qualifying patients for surgery; 11. Learn principles of surgical room operation, record-keeping, collecting specimens for histopathology and cytology tests; 12. Assist in gynecological operations; 13. Follow-up on early postoperative patients and keep follow-up records; 14. Manage patients hospitalized due to risk of miscarriage; 15. Learn prophylactic procedures in breast and female reproductive organs neoplasms.	W1, W2, U1, U2, U3, K1, K2	professional practice

Course advanced

Teaching methods:

professional practice

Activities	Examination methods	Credit conditions
professional practice	booklet of practical skills, booklet of practice	The preceptor is responsible for fulfillment of clerkship outline and grants credit to student by filling out the JU MC Certificate of Summer Clerkship Completion. The student is obliged to keep record of all performed procedures and acquired skills in the List of Approved Procedures booklet.

Additional info

2 weeks (60 h)(5 days/week, 6 h/day); can be completed over summer vacation months only (July - August).
During that time, student must complete two on-call duties at each ward between 2 pm and 8 pm on the ward of student’s choosing. On the on-call days, active interns are excused from presence in the obligatory activities before 2pm.
Excused absence can be granted to the active intern only on submitting formal medical certificate. Illness longer than one week causes internship to be lengthened by the time of absence.