Appendix
to Resolution No. 2186
of Senate of Wroclaw Medical University
of 1 July 2020

Syllabus for academic year: 2020/2021

Description of the course

Module/Course	PATHOPHYSIOLOGY	Group of detailed education results	
		Group code	Group name
Faculty	Medical – Dentistry		
Major	Medical – Dentistry		
Unit realizing the subject	Pathophysiology Department		
Specialties	N/A		
Level of studies	Uniform magister studies X* 1st degree studies □ 2nd degree studies □ 3rd degree studies □ postgraduate studies □		
Form of studies	X full-time □ part-time		
Year of studies	III	Semester	X Winter □ Summer
Type of course	X obligatory □ limited choice □ free choice / elective		
Course	□ major X basic		
Language of instruction	□ Polish X English □ other		

* mark □ with an X

Number of hours

Form of education

Unit teaching the course	Lectures (L)	Seminars (SE)	Auditorium classes (AC)	Major Classes – not clinical (MC)	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Specialist Classes – magister studies (SCM)	Foreign language Course (FLC)	Physical Education obligatory (PE)	Vocational Practice (VP)	Self-Study (Student's own work)	E-learning (EL)
Winter Semester														
Direct (contact) education				12.5										
Online learning (synchronous)														
Distance learning (asynchronous)	10	10		12.5										

Summer Semester														
Direct (contact) education														
Online learning (synchronous)														
Online learning (asynchronous)														
TOTAL per year:														
Direct (contact) education				12.5										
Online learning (synchronous)														
Online learning (asynchronous)	10		10	12.5										

Educational objectives (max. 6 items)

C1. The general goal is to elucidate the structural and functional pathomechanisms underlying the most common disorders and diseases affecting the individual organs of the human body, as well mechanisms controlling a process of homeostasis in healthy and insane state

Education result matrix for module/course in relation to verification methods of the intended education result and the type of class

Number of course education result	Number of major education result	Student who completes the module/course knows/is able to	Methods of verification of intended education results (forming and summarising)	Form of didactic class ***enter the abbreviation*
W 01	B.1-B.3; B.16, B.18; B.19, B.20; B.23-B. 26; B.28	Student defines, describes and explains pathophysiological background of the most common and significant diseases and disorders	Oral response, test	L, MC, SE
W 02	B.30	Student knows how to combine the various symptoms to make up a diagnosis of the disease and is able to predict the complications of the diseases	Oral response, test	L, MC, SE
U 01	B.U7, B.U8, B.U14	Student is able to recognize and give an interpretation of the essential abnormalities of ECG (electrocardiographic) recordings	Oral response	L, MC, SE

** L - lecture; SE - seminar; AC – auditorium classes; MC – major classes (non-clinical); CC – clinical classes; LC – laboratory classes; SCM – specialist classes (magister studies); CSC – classes in simulated conditions; FLC – foreign language course; PCP practical classes with patient; PE – physical education (obligatory); VP – vocational practice; SS – self-study, EL – E-learning .

Please mark on scale 1-5 how the above effects place your classes in the following categories: communication of knowledge, skills or forming attitudes:

Knowledge: 4

Skills: 1

Social competences: 0

Student's amount of work (balance of ECTS points)	
Student's workload (class participation, activity, preparation, etc.)	**Student Workload (h)**
1. Contact hours:	45/2
2. Online learning hours (e-learning):	45/2
3. Student's own work (self-study):	40
Total student's workload	85
ECTS points for module/course	4.0
Comments	

Content of classes (please enter topic words of specific classes divided into their didactic form and remember how it is translated to intended educational effects)

Lectures

1. Pathophysiological background of electrocardiography. Pathomechanisms and risk factors of atherosclerosis; essentials of cardiovascular disease prevention. Ischemic heart disease and myocardial infarction.
2. Pathophysiology of respiratory system. Failure of circulation. Bronchial asthma and chronic obstructive pulmonary disease (COPD).
3. Pathophysiology of endocrine system. Organization of the endocrine system, neuro-humoral regulation, negative feedback loop. Hormones – classification, secretion and effects of functioning. Diabetes mellitus and its complications.
4. Pathophysiology of urine system. Renal failure. Water-electrolyte and acid-base disorders.
5. Disturbances of the coagulation system. Haematological diseases

Seminars

1. Arrhythmias. Diseases of the cardiovascular system with particular emphasis on atherosclerosis, hypertension, ischemic heart disease and myocardial infarction.
2. Pathophysiology of obstructive and restrictive diseases of the lungs. Basics of spirometry. Respiratory disorder type 1 and 2. Acute and chronic respiratory failure.
3. Endocrine diseases.
4. Pathophysiology of the urinary tract. Acute and chronic renal failure. Water - electrolyte and acid-base disorders. Basics of blood gas.
5. Disturbances of the coagulation system. Diseases of the erythrocortex and white blood cell system. Interpretation of blood counts

Practical classes

- Practicing the normal ECGs interpretation and description.
- Pathomechanisms of cardiac rhythm disturbances
- Reading the ECGs presenting arrhythmias and heart blocks.
- Reading the ECGs presenting various forms of myocardial ischemia and infarct.
- Right and left ventricle failure – pathomechanism, signs, consequences.
- Arterial hypertension – causes, symptoms and signs, consequences.
- Valvular heart disease – pathogenesis, influence over hemodynamics
- ECG findings in various clinical states (hypertrophy, electrolytes imbalance, artificial pacemaker)
- Normal blood composition, blood count, main blood functions.
- Thrombophilia (hypercoagulability, prothrombotic state) – predisposing factors, consequences
- Pathological bleeding – vascular abnormalities, platelets disorders, coagulation disorders
- Platelets disorders: thrombocytopenia, thrombocytosis, thrombocytopathia

- Hemophilia A and B – etiopathogenesis, clinical course, outcome, replacement therapy
- Anemias – etiopathogenesis, classification, clinical signs, laboratory diagnostics
- Leukemias – acute and chronic: etiopathogenesis, classification, signs, diagnostics, prognosis
- Credit Test #1 (cardiology, coagulation system, haematological diseases)
- Cholelithiasis and cholecystitis – etiology, clinical presentation
- Pancreatitis, acute and chronic – etiology, clinical presentation
- Acute and chronic respiratory insufficiency – etiology, clinical presentation
- Obstructive lung diseases. Restrictive lung diseases.
- Emphysema, pneumothorax, atelectasis, pulmonary oedema. Pulmonary embolism – etiology, signs
- Growth hormone – pathophysiology, dysfunctions: growth hormone deficiency, gigantism and acromegaly
- Posterior pituitary hormones (ADH and oxytocin) abnormalities
- Hyperthyroidism, Graves' disease – etiology, pathomechanism, symptoms and signs
- Hypothyroidism – congenital, acquired; etiopathogenesis, clinical presentation
- Calcium-phosphates metabolism; hormonal regulation, rickets
- Hypoparathyroidism – causes, clinical signs: hypocalcemia, tetany
- Hyperparathyroidism: primary and secondary – causes; hypercalcemia – consequences
- Adrenocortical hormones (glucocorticoids, mineralocorticoids, sex hormones) – pathophysiology
- Hypercortisolism – Cushing's syndrome, Cushing's disease, cushingoidal syndrome
- Hyperaldosteronism – Conn's syndrome: arterial hypertension, hypopotasemia
- Adrenocortical insufficiency – Addison's disease: etiopathogenesis, clinical presentation
- Diabetes mellitus – epidemiology, etiology, pathomechanisms, clinical classification
- Diabetes mellitus type 1 – clinical presentation, acute and chronic complications, treatment
- Diabetes mellitus type 2 – clinical presentation, acute and chronic complications, pathophysiology of accelerated atherosclerosis, management (diet, drugs and physical activity)
- Hormone secreting pancreatic tumors (insulinoma, glucagonoma, somatostatinoma)
- Urinalysis – normal and pathological components; polyuria, oliguria, anuria; proteinuria, bacteriuria
- Acute renal failure – causes, pathomechanisms, clinical presentations, lab tests
- Chronic renal failure – causes, pathomechanisms, clinical presentations, lab tests
- Nephrotic syndrome – causes, clinical presentation, complications
- Glomerulonephritis – etiology, classification, manifestations, diagnostics, complications
- Pyelonephritis – etiology, clinical presentation, diagnostics, complications
- Renal stones – etiology, clinical presentation, diagnostics, complications

Credit Test # 2 (Alimentary, Urinary and Respiratory systems and Endocrinology)

Basic literature (list according to importance, no more than 3 items)

1. Pathophysiology, L-E.C. Copstead, J.L. Banasik, Elsevier Saunders, 2005.
2. Pathopysiology of Disease 5th edition, S.J. McPhee, Lange Medical Books, 2006.

Additional literature and other materials:

1. ECG tracings, real results of gasometry, morphology and spirometry

Didactic resources requirements (e.g. laboratory, multimedia projector, other…)

Laptop, projector, ECG apparatus, board + chalk / felt-tip pens

Preliminary conditions (minimum requirements to be met by the student before starting the module/course)

Knowledge on human anatomy and physiology

Conditions to receive credit for the course (specify the form and conditions of receiving credit for classes included in the module/course, admission terms to final theoretical or practical examination, its form and requirements to be med by the student to pass it and criteria for specific grades)

IMPORTANT! Class attendance cannot be a condition for passing the subject.

1. presence on lectures and seminaries - in accordance with the Regulations of Studies it is necessary to make up all absences in classes, including rector's days and dean's hours, while it is possible to

make up the absence in the form of a presentation or essay prepared by the student as part of self-study; 2. obtaining positive grades from both credit tests FINAL EXAM – single choice test (50-100 questions)

Grade:	**Criteria** (only for courses/modules ending with an examination)
Very Good (5.0)	according to the Gaussian distribution curve
Good Plus (4.5)	according to the Gaussian distribution curve
Good (4.0)	according to the Gaussian distribution curve
Satisfactory Plus (3.5)	according to the Gaussian distribution curve
Satisfactory (3.0)	according to the Gaussian distribution curve

Unit realizing the subject	Katedra Patofizjologii (Department of Pathophysiology),
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Person responsible for module	Prof. dr hab. n. med. Witold Pilecki
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List of persons conducting specific classes				
Full name	**Degree/scientific or professional title**	**Discipline**	**Performed profession**	**Form of classes**
Witold Pilecki	Prof. dr hab. n. med. lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Dariusz Kałka	Dr hab. n. med. lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars

Tadeusz Sebzda	Dr hab. n. med. lek	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Anna Janocha	Dr hab. n. med. lek	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Małgorzata Poręba	Dr hab. n. med. lek	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Anna Miętka	Dr n. med.lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Lech Kipiński	Dr inż. lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Beata Kaczmarek-Wdowiak	Dr n. med.lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Patrycja Leśnik	Dr n. med.lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Małgorzata Korzeniewska	Lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Barbara Dziadkowiec	Lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Marzena Majchrowska	Mgr inż. lek.	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars
Irena Wolińska	lek	**Pathophysiology**	Doctor of medicine	Lectures, practical classes, seminars

Date of Syllabus development

25.09.2020

Syllabus developed by

Prof. dr hab.n.med. lek. Witold Pilecki
mgr inż. lek. Marzena Majchrowska

Signature of Head of teaching unit

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Signature of Faculty Dean

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