

Syllabus 2017/2018

Description of the course

Module/Course	Laboratory diagnostics	Group of detailed education results	
		Group code E	Group name Clinical sciences
Faculty	Medicine		
Major	medicine		
Specialties	Not applicable		
Level of studies	Uniform magister studies X * 1 st degree studies <input type="checkbox"/> 2 nd degree studies <input type="checkbox"/> 3 rd degree studies <input type="checkbox"/> postgraduate studies <input type="checkbox"/>		
Form of studies	X full-time X part-time		
Year of studies	III	Semester	<input type="checkbox"/> Winter X Summer
Type of course	X obligatory <input type="checkbox"/> limited choice <input type="checkbox"/> free choice / elective		
Course	<input type="checkbox"/> major X basic		
Language of instruction	<input type="checkbox"/> Polish X English <input type="checkbox"/> other		
* mark <input type="checkbox"/> with an X			

Number of hours

Form of education

[illegible]



TOTAL per year:

	13				30									

Educational objectives (max. 6 items)

- C1. Acquisition of the knowledge on the principles of laboratory diagnostics.
C2. Understanding the basic rules underlying the design of differential diagnosis with respect to chosen common diseases.
C3. Acquaintance with the basic laboratory tests applied in diagnosis.
C4. Familiarity with the analysis and interpretation of the results of diagnostic tests.

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
K01	E. W3	Knows the principles of diagnosis of the most common internal diseases in children (with the application of appropriate laboratory tests):	test, report, essay	L, LC
	d)	anaemias, haemorrhagic diatheses, cancer diseases		
	e)	vomiting, diarrhoea, gastrointestinal bleeding, ulcers, hepatobiliary tract diseases		
	f)	urinary tract infections, nephrolithiasis, kidney failure, nephritis.		
K02	g)	growth disturbances, thyroid and parathyroid glands diseases, adrenal gland diseases, diabetes, obesity		
	E. W7	Knows the principles of diagnosis of the most common internal diseases in adults (with the application of appropriate laboratory tests), including:		
	a)	cardiovascular diseases (e.g. myocardial ischemia, cardiac insufficiency)		
	b)	respiratory tract diseases, including respiratory failure		
	c)	gastrointestinal diseases, including hepatobiliary system dysfunction		
	d)	endocrine diseases, including hypothalamus, pituitary, thyroid and parathyroid gland pathologies, dyslipidaemia, metabolic syndrome, diabetes		



K03 K04 K05 K06 K07 K08 K09	e)	urinary tract diseases, including kidney infection		
	f)	haematopoietic system diseases, including haemorrhagic diathesis		
	i)	acid-base balance disturbances, including acidosis, alkalosis		
	E.W23	Knows environmental determinants of the commonest cancer diseases		
	E.W24	Knows the principles of the early diagnosis and screening tests in cancer diseases		
	E.W32	Knows the principles of the diagnosis of the most common infectious diseases (with the application of appropriate laboratory tests).		
	E.W37	Knows types of biological material applied in laboratory diagnostics, and the principles of its uptake for tests procedures.		
	E.W38	Knows theoretical and practical basis of laboratory diagnostics.		
	E.W39	Knows and understands the options and constraints of laboratory tests in emergency.		
	E.W40	Knows indications for the administration of monitoring therapy.		
S 01	E.U12	Performs differential diagnosis of the most common diseases in adults and children.	test, report, essay	L, LC
S 02	E.U14	Recognizes life-threatening states (on the basis of laboratory tests)		
S 03	E.U15	Recognizes the state characteristic for alcohol and drugs of abuse intake (on the basis of laboratory tests results)		
S 04	E.U16	Plans diagnostic and prophylactic conduct.		
S 05	E.U24	Interprets the results of laboratory tests and identifies the reasons of deviations.		
S 06	E.U29	Is able to conduct simple procedures, including:		
	i)	strip tests and the measurement of glucose concentration in blood		

** 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: 5

Skills: 5

Student's amount of work (balance of ECTS points)

Student's workload

(class participation, activity, preparation, etc.)

Student Workload (h)

1. Contact hours:

43

2. Student's own work (self-study):

15

Total student's workload

58



ECTS points for module/course	2
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 <ol style="list-style-type: none">1. (1h) The proper choice of laboratory investigations in disease. Limitation and interpretation of results.2. (1h) Laboratory diagnostics of urinary tract diseases, and overall urine analysis.3. (1h) Laboratory diagnostics associated with disturbances of calcium-phosphate metabolism.4. (1h) Laboratory diagnostics of electrolyte and acid-base imbalance.5. (2h) Diagnostic tests applied in cancer diseases.6. (1h) Laboratory investigation of thyroid disorders.7. (1h) Laboratory tests for acute myocardial infarction.8. (1h) Clinical enzymology.9. (1h) Plasma proteins in pathology.10. (1h) Laboratory tests applied in the estimation of the secretory function of gastrointestinal tract.11. (1h) Toxicological diagnostics.12. (1h) Final test in laboratory diagnostics	
Seminars <ol style="list-style-type: none">1.2.3.	
Practical classes <ol style="list-style-type: none">1. Sources of error in laboratory practice.2. Application of alkaline phosphatase determination in serum in diagnosis of hepatobiliary diseases and bone diseases.3. Diagnostic significance of gamma-glutamyltransferase measurement in serum in hepatobiliary diseases.4. Application of aminotransferases determination in diagnosis of liver diseases and myocardial infarction.5. Diagnostic tests indicative of iron deficiency and iron overload (quantitative determination of free and bound iron in blood serum).6. Basic diagnostic tests applied for the evaluation of lipid metabolism disturbances (including determination of lipids profile and lipid peroxidation level in serum).7. Diet in prophylaxis of obesity, metabolic syndrome and diabetes (examination of blood glucose level after administration of foods with different glycemic indices).8. Diagnostic analysis of physiological fluids (including urine and cerebrospinal fluids).9. Determination of the elements of clotting system.10. Assessment of erythrocytes resistance to hemolysis.	
Other <ol style="list-style-type: none">1.2.3. etc. ...	
Basic literature (list according to importance, no more than 3 items) <ol style="list-style-type: none">1. Geoffrey Beckett, Simon Walker, Peter Rae, Peter Ashby "Lecture Notes: Clinical Biochemistry" 9th edition, Wiley-Blackwell, 2013, ISBN 978-1-118-71510-92. Handbook of Diagnostic Tests, Lippincott Williams & Wilkins, Third Edition, ISBN 1-58255-203-73. Carl A. Burtis, Edward A. Ashwood "Tietz Fundamentals of Clinical Chemistry"	



Additional literature and other materials (no more than 3 items)

1. William Marshall, Stephen Bangert „Clinical Chemistry” ISBN 0 7234 3328 3 Elsevier Books
2. Nancy A. Brunzel "Fundamentals of Urine and Body Fluid Analysis", Third Edition, ISBN 978-1-4377-0989-6, Elsevier
3. Thomas M. Devlin "Textbook of Biochemistry with clinical correlation"

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

1. Laboratories, lecture halls.
2. Laboratory utilities; water baths, centrifuges, incubators, spectrophotometers, glassware, pipettes, microscopes.
3. Multimedia projectors, whiteboards.

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

Students should have the knowledge covering the material in physiology and biochemistry at the level required for the students of Medical Faculty

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 met by the student to pass it and criteria for specific grades)

To complete the course in laboratory diagnostics students should obtain credits for all laboratories (taking into account §12 subparagraph 3 of Wrocław Medical University Regulations of Studies), as well as obtain at least 60% for the final task which consists of two parts: the final report prepared on the basis of the results achieved during the classes, and the final test comprising theoretical material from lectures and classes.

Grade:	Criteria (only for courses/modules ending with an examination)
Very Good (5.0)	
Good Plus (4.5)	
Good (4.0)	
Satisfactory Plus (3.5)	
Satisfactory (3.0)	



Name and address of module/course teaching unit, contact: telephone and e-mail address

Department of Medical Biochemistry, Chałubińskiego 10, 50-368 Wrocław

Secretarial office: e-mail: wl-4@umed.wroc.pl; phone: 784-13-70

Coordinator / Person responsible for module/course, contact: telephone and e-mail address

Dr Izabela Berdowska, phone: 784 13 92; e-mail: izabela.berdowska@umed.wroc.pl

List of persons conducting specific classes: full name, degree/scientific or professional title, discipline, performed profession, form of classes.

Teachers	Degree, field of study, occupation	Type of classes
Iwona Bednarz-Misa	Doctor of Medical Sciences, Laboratory diagnostician, Biochemist, adjunct	Laboratories
Izabela Berdowska	Doctor of Medical Sciences, Biochemist, adjunct	Lectures, laboratories
Ireneusz Ceremuga	Doctor of Medical Sciences, Biochemist, adjunct	Laboratories
Małgorzata Krzystek-Korpacka	Doctor hab. of Medical Sciences, Biochemist, adjunct	Laboratories
Krzysztof Matusiewicz	Doctor of Medicine, Medical doctor, adjunct	Lectures, laboratories
Małgorzata Matusiewicz	Doctor of Medical Sciences, Biochemist, senior lecturer	Lectures, laboratories
Paweł Serek	Master of Science, Laboratory diagnostician, PhD student	Laboratories
Bogdan Zieliński	Doctor of Medical Sciences, Biochemist, adjunct	Laboratories

Date of Syllabus development

30.06.2017

Syllabus developed by

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