Appendix 5
to Resolution No. 15630
of Senate of Wroclaw Medical University
of 30 March 2016

| Syllabus 2019/2020 | | | |
|---|---|---|---|
| Description of the course | | | |
| Module/Course | **SELECTED ISSUES IN CLINICAL BIOCHEMISTRY** | Group of detailed education results | |
| | | Group code B | Group name Scientific principles of medicine |
| Faculty | Medicine | | |
| Major | medicine | | |
| Specialties | Not applicable | | |
| Level of studies | Uniform magister studies X *<br>1st degree studies ☐<br>2nd degree studies ☐<br>3rd degree studies ☐<br>postgraduate studies ☐ | | |
| Form of studies | X full-time ☐ part-time | | |
| Year of studies | II | Semester | ☐ Winter<br>x Summer |
| Type of course | ☐ obligatory<br>☐ limited choice<br>x 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** | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| **Summer Semester** | | | | | | | | | | | | | | |
| Department of Medical Biochemistry | | 20 | | | | | | | | | | | | |
| **TOTAL per year:** | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20 | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Educational objectives (max. 6 items)

C1. Acquisition of the knowledge of modern clinical biochemistry

C2. Acquaintance with the key problems of modern clinical biochemistry not covered in the school textbooks.

C3. Understanding the disturbances in metabolic pathways that contribute to pathogenesis of the civilization diseases.

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** | B.W15<br>B.W16<br>B.W19<br>B.W11<br>B.W26 | Knows the metabolic disturbances leading to the development of obesity, metabolic syndrome, diabetes, and atherosclerosis | Presentation,<br>Discussion,<br>Essay | SE |
| **K02** | B.W15<br>B.W19<br>B.W21<br>B.W28 | Knows the role of glycation in physiology and pathology | | SE |
| **K03** | B.W26<br>B.W15 | Knows the role of nitric oxide in physiology and pathology | | SE |
| **K04** | B.W15<br>B.W19<br>B.W20 | Knows the roles of vitamins in metabolism and pathology | | SE |
| **K05** | B.W15<br>B.W16 | Knows the metabolic features of cancer cells | | SE |
| **K06** | B.W15<br>E.W38 | Knows the diagnostic usefulness of biochemical markers | | SE |
| **K07** | B.W15<br>B.W26<br>B.W19 | Knows the biology and biochemistry of milk | | |
| **S01** | B.U3<br>B.U8<br>B.U9 | Is able to establish cause-effect relationships between the disturbances in metabolism and civilization diseases. | Presentation,<br>Discussion,<br>Essay | SE |
| **S02** | B.U3<br>B.U8<br>B.U9 | Can predict the consequences of vitamin deficiency as well as the effects of their excessive intake on metabolism. | | |

| | |
|---|---|
| ** 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:<br>communication of knowledge, skills or forming attitudes:<br>Knowledge: 5<br>Skills: 5 | |
| Student's amount of work (balance of ECTS points) | |
| Student's workload<br>(class participation, activity, preparation, etc.) | Student Workload (h) |
| 1. Contact hours: | 20 |
| 2. Student's own work (self-study): | 6 |
| Total student's workload | 26 |
| ECTS points for module/course | 1,0 |
| Comments | NA |
| 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<br>1. Not applicable | |
| Seminars<br>1. Biochemistry of milk<br>2. Metabolic diseases (part I): Biochemistry of diabetes and metabolic syndrome.<br>3. Metabolic diseases (part II): How to get yourself into trouble with corn syrup ?<br>4. Metabolic diseases (part III): Atherosclerosis or why macrophages phagocyte lipoproteins?<br>5. Lipidomics – drawing a lipid landscape<br>6. Is it a question of AGE (advanced glycation end-products)?<br>7. Biochemistry of tumors<br>8. Learn to say NO – when nitric oxide is good for you?<br>9. Proteins and molecules as disease markers<br>10. Wunderwaffe: vitamins | |
| Practical classes<br>1. Not applicable. | |
| Other<br>1. Consultations. | |
| **Basic literature** (list according to importance, no more than 3 items)<br>1. Thomas M. Devlin „Biochemistry with Clinical Correlations", Willey-Liss, New York<br>**Additional literature and other materials** (no more than 3 items)<br>1. Scientific literature on the problems addressed on the particular seminars | |
| Didactic resources requirements (e.g. laboratory, multimedia projector, other...)<br>1. Seminar rooms.<br>2. Multimedia projectors, computer, whiteboard | |
| Preliminary conditions (minimum requirements to be met by the student before starting the module/course)<br>Signing–up for the course before its beginning | |

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| Conditions to receive credit for the course (specify the form, criteria 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). |
|---|
| Student are obliged to attend all seminars (§12 section 3 University Regulations). At the end of the course students will present selected topics in presentation or an essay. |

| Grade: | Criteria for course |
|---|---|
| Very Good (5.0) | active participation in seminars, discussions and preparation of individual presentation or essay |
| Good Plus (4.5) | active participation in seminars, discussions and preparation of individual presentation or essay |
| Good (4.0) | active participation in seminars and additionally the preparation (in teams) multimedia presentation |
| Satisfactory Plus (3.5) | active participation in seminars |
| Satisfactory (3.0) | participation in seminars |

| Grade: | Criteria for exam (if applicable) |
|---|---|
| Very Good (5.0) | |
| Good Plus (4.5) | |
| Good (4.0) | |
| Satisfactory Plus (3.5) | |
| Satisfactory (3.0) | |

| **Name of unit teaching course:** | **Department of Medical Biochemistry** |
|---|---|
| Address | Chałubińskiego 10, 50-368 Wrocław |
| Phone | 71 784 1370 |
| E-mail | wl-4@umed.wroc.pl |

| **Person responsible for course:** | **dr Mariusz Aleksander Bromke** |
|---|---|
| Phone | 71 784 1387 |
| E-mail | mariusz.bromke@umed.wroc.pl |

| *List of persons conducting specific classes:* | *degree/scientific or professional title* | *Discipline* | *Performer profession* | *Form of classes* |
|---|---|---|---|---|
| Mariusz Aleksander Bromke | Doctor of Natural Sciences | biochemistry | Biochemist, adjunct | SE |
| Jerzy Wiśniewski | Doctor of Medical Sciences | medical sciences and health sciences | Biochemist, adjunct | SE |
| Ireneusz Ceremuga | Doctor of Medical Sciences, Laboratory Diagnostician | medical sciences and health sciences | diagnostician, biochemist, adjunct | SE |

UNIWERSYTET MEDYCZNY
IM. PIASTÓW ŚLĄSKICH WE WROCŁAWIU

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**Date of Syllabus development**

10.07.2019

**Syllabus developed by**

dr Mariusz A. Bromke

**Signature of Head of teaching unit**

Uniwersytet Medyczny we Wrocławiu
KATEDRA I ZAKŁAD BIOCHEMII LEKARSKIEJ
kierownik
prof. dr hab. Andrzej Gamian

Signature of Faculty Dean

Wroclaw Medical University
FACULTY OF MEDICINE
VICE-DEAN FOR STUDIES IN ENGLISH
Prof. Andrzej Hendrich, PhD