

## DESCRIPTION OF THE COURSE OF STUDY

|                              |                           |                                  |
|------------------------------|---------------------------|----------------------------------|
| <b>Course code</b>           | <b>0912-7LEK-C5.11-LL</b> |                                  |
| <b>Name of the course in</b> | Polish                    | <b>Diagnostyka laboratoryjna</b> |
|                              | English                   | <b>Laboratory diagnostics</b>    |

### 1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

|  |   |
|--|---|
| <b>1.1. Field of study</b>                             | Medicine  |
| <b>1.2. Mode of study</b>                              | Full-time   |
| <b>1.3. Level of study</b>                             | Uniform Master's studies                                |
| <b>1.4. Profile of study*</b>                          | practical   |
| <b>1.5. Specialization*</b>                            | Lack  |
| <b>1.6. Unit running the course of study</b>           | Faculty of Medicine and Health Sciences                 |
| <b>1.7. Person/s preparing the course description</b>  | Dr. n. med. Urszula Grabowska, mgr Agnieszka Piechowska |
| <b>1.8. Person responsible for the course of study</b> | Mgr Agnieszka Piechowska                                |
| <b>1.9. Contact</b>                                    | agnieszka-piechowska@wp.pl                              |

### 2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

|   |                                   |
|---|-----------------------------------|
| <b>2.1. Affiliation with the module</b>                       | Non-surgical clinical sciences    |
| <b>2.2. Language of instruction</b>                           | English                           |
| <b>2.3. Semesters in which the course of study is offered</b> | 3rd                               |
| <b>2.4. Prerequisites*</b>                                    | Biology, biochemistry, physiology |

### 3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

|                                |  |
|--------------------------------|--|
| <b>3.1. Form of classes</b>    | Lecture - 15 h, Classes – 40 h   |
| <b>3.2. Place of classes</b>   | Lectures and classes in the teaching rooms of UJK  |
| <b>3.3. Form of assessment</b> | Lecture – E, Classes – Zo (credit with grade)  |
| <b>3.4. Teaching methods</b>   | Informative lecture with the usage of multimedia techniques.<br>Classes using activation techniques.   |
| <b>3.5. Bibliography</b>       | <b>Required reading</b>  |
|                                | <b>Further reading</b>   |
|                                | 1. Gaw A., Murphy M. J., Rajeev S. & 2 more, Clinical Biochemistry, ELSEVIER, 2013<br>2. Provan D., Baglin T., Oxford Handbook of Clinical Haematology, Oxford University Press, 2015<br><br>1. Becket G., Walker S. W., Rae P. & 1 more, Clinical Biochemistry, Blackwell Publishing Ltd., 2005<br>2. Brunzel N.A., Fundamentals of Urine & Body Fluids Analysis, ELSEVIER (Saunders), 2016 |

### 4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED TEACHING OUTCOMES

#### 4.1. Course objectives (including form of classes)

##### For both forms of classes:

- acquaintance with analytical methods as a diagnostic tool,
- presentation of the principles of the proper collection of biological material for laboratory research,
- gaining the ability to interpret the results of laboratory research,
- familiarity with the rules of a doctor cooperation with the laboratory.

#### 4.2. Detailed syllabus (including form of classes)

##### Lecture:

1. The rules of functioning of diagnostic laboratory.
2. Laboratory research as a tool in the diagnosis of diseases.
3. Research in the scope of medical analytics.
4. Water-electrolyte and acid-base balance disorders.
5. Laboratory diagnostics of mineral metabolism disorder.
6. The diagnostics of disorders of white and red blood cell system.
7. Laboratory research in a diagnostics of kidney diseases.
8. Laboratory diagnostics of endocrine disorders.
9. Laboratory diagnostics of digestive system diseases.

10. Tumor markers and their diagnostic usefulness.
11. Immunodiagnostics.

**Classes:**

1. The factors affecting the reliability of the result of laboratory research.
2. Collecting biological material for laboratory test.
3. The methods used in laboratory diagnostics.
4. Laboratory diagnostics of metabolic disorders. Obesity.
5. Disorders of exo and endocrine functions of the pancreas. Diabetes.
6. Laboratory research in the assessment of lipid metabolism.
7. Laboratory diagnostics of hemostasis disorders.
8. Laboratory diagnostics of haematological malignancies.
9. Laboratory test in a diagnostics of inflammatory conditions. Acute phase proteins.
10. Clinical enzymology.
11. Serological diagnostics.
12. Cooperation between a doctor and medical laboratory.
13. Interpretation of the laboratory test results in various clinical conditions.

**4.3. Education outcomes in the discipline**

| Code                                  | A student, who passed the course   | Relation to teaching outcomes |
|---------------------------------------|--|-------------------------------|
| within the scope of <b>KNOWLEDGE:</b> |  |                               |
| W01                                   | knows and understands the basics of microbiological and parasitological diagnosis;   | C.W18.                        |
| W02                                   | knows the basic principles of diagnostic poisoning   | C.W45.                        |
| W03                                   | knows environmental and epidemiological conditions for the most common diseases;   | E.W1.                         |
| W04                                   | knows the types of biological materials used in laboratory diagnosis and the rules for the collection of research material;  | E.W37.                        |
| W05                                   | knows theoretical and practical foundations for laboratory diagnostics;  | E.W38.                        |
| W06                                   | knows and understands the capabilities and limitations of laboratory tests in emergency situations;  | E.W39.                        |
| W07                                   | lists indications for the implementation of monitoring therapy   | E.W40.                        |
| within the scope of <b>ABILITIES:</b> |  |                               |
| U01                                   | applies basic laboratory techniques, such as: qualitative analysis, titration, colorimetry, pehametry, chromatography, electrophoresis of proteins and nucleic acids;      | B.U9.                         |
| U02                                   | plans diagnostic, therapeutic and preventive procedures;   | E.U16.                        |
| U03                                   | interprets laboratory tests/results and identifies the reasons for deviations  | E.U24.                        |
| U04                                   | collects samples of material used in laboratory diagnostics;   | E.U28.                        |
| U05                                   | complies with the aseptic and antiseptic rules;  | F.U3.                         |
| U06                                   | uses antigen-antibody reaction in current modifications and techniques for the diagnosis of infectious diseases, allergies, autoimmune diseases, blood diseases and cancer | C.U8                          |

**4.4. Methods of assessment of the intended teaching outcomes**

| Teaching outcomes<br>(code) | Method of assessment (+/-) |   |     |                 |   |     |                 |   |     |                  |   |     |                 |   |     |                 |   |     |         |   |     |
|-----------------------------|----------------------------|---|-----|-----------------|---|-----|-----------------|---|-----|------------------|---|-----|-----------------|---|-----|-----------------|---|-----|---------|---|-----|
|                             | Exam oral/written*         |   |     | Test*           |   |     | Project*        |   |     | Effort in class* |   |     | Self-study*     |   |     | Group work*     |   |     | Others* |   |     |
|                             | Form of classes            |   |     | Form of classes |   |     | Form of classes |   |     | Form of classes  |   |     | Form of classes |   |     | Form of classes |   |     |         |   |     |
|                             | L                          | C | ... | L               | C | ... | L               | C | ... | L                | C | ... | L               | C | ... | L               | C | ... | L       | C | ... |
| W01                         | +                          | - |     | -               | - |     | -               | - |     | -                | - |     | -               | - |     | -               | - |     | -       | - |     |
| W02                         | +                          | - |     | -               | - |     | -               | - |     | -                | - |     | -               | - |     | -               | - |     | -       | - |     |
| W03                         | +                          | - |     | -               | + |     | -               | - |     | -                | - |     | -               | - |     | -               | - |     | -       | - |     |
| W04                         | -                          | - |     | -               | + |     | -               | - |     | -                | - |     | -               | - |     | -               | - |     | -       | - |     |
| W05                         | +                          | - |     | -               | + |     | -               | - |     | -                | - |     | -               | - |     | -               | - |     | -       | - |     |

|     |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W06 | + | - | - | + | - | - | - | - | - | - | - | - | - |
| W07 | + | - | - | - | - | - | - | - | - | - | - | - | - |
| U01 | + | - | - | + | - | - | - | - | - | - | - | - | - |
| U02 | + | - | - | + | - | - | - | - | - | - | - | - | - |
| U03 | + | - | - | + | - | - | - | - | - | - | - | - | - |
| U04 | - | - | - | + | - | - | - | - | - | - | - | - | - |
| U05 | + | - | - | + | - | - | - | - | - | - | - | - | - |
| U06 | + | - | - | + | - | - | - | - | - | - | - | - | - |

*\*delete as appropriate*

#### 4.5. Criteria of assessment of the intended teaching outcomes

| Form of classes | Grade | Criterion of assessment   |
|-----------------|-------|---|
| lecture (L)     | 3     | Class attendance and active participation. Mastering course content at the primary level. Inability to combine different groups of issues in logical sequences.   |
|                 | 3,5   | Class attendance, active participation. Presenting the knowledge after being directed.  |
|                 | 4     | Class attendance, active participation. Mastering course content at the satisfactory level, presenting the knowledge moderately independently. Ability to use it in typical situations.                   |
|                 | 4,5   | Class attendance, active participation. Mastering the full range of course content, presenting independent responses based on the knowledge. Ability to analyze and critically interpret the information. |
|                 | 5     | Class attendance, active participation. Mastering the full range of course content, presenting independent responses based on the knowledge. Ability to analyze and critically interpret the information. |
| classes (C)*    | 3     | From 50%  |
|                 | 3,5   | From 62,5%  |
|                 | 4     | From 75%  |
|                 | 4,5   | From 82,5%  |
|                 | 5     | From 90%  |

#### 5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

| Category  | Student's workload |
|---|--------------------|
|   | Full-time studies  |
| <i>NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/</i> | <b>55</b>          |
| <i>Participation in lectures*</i>   | <b>15</b>          |
| <i>Participation in classes, seminars, laboratories*</i>                            | <b>40</b>          |
| <i>Preparation in the exam/ final test*</i>   |                    |
| <i>Others*</i>  |                    |
| <i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>                           | <b>45</b>          |
| <i>Preparation for the lecture*</i>   |                    |
| <i>Preparation for the classes, seminars, laboratories*</i>                         | <b>30</b>          |
| <i>Preparation for the exam/test*</i>   | <b>15</b>          |
| <i>Gathering materials for the project/Internet query*</i>                          |                    |
| <i>Preparation of multimedia presentation</i>                                       |                    |
| <i>Others*</i>  |                    |
| <b>TOTAL NUMBER OF HOURS</b>  | <b>100</b>         |
| ECTS credits for the course of study  | <b>4</b>           |

*Accepted for execution (date and signatures of the teachers running the course in the given academic year)*

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