| 1. | Field of study | Biotechnology |
|---|---|---|
| 2. | Academic year of entry | 2014/2015 (winter term) |
| 3. | Level of qualifications/degree | first-cycle studies |
| 4. | Degree profile | general academic |
| 5. | Mode of study | full-time |

## Module: Cell biology

**Module code:** 1BT_16

**1. Number of the ECTS credits:** 6

**2. Learning outcomes of the module**

| code | description | learning outcomes of the programme | level of competence (scale 1-5) |
|---|---|---|---|
| 1BT_16_1 | Possess knowledge of the biology of eukaryotic cells. | 1BT_W09<br>1BT_W10 | 4<br>4 |
| 1BT_16_2 | Classifies organelles of plants and animals cells. | 1BT_W12 | 4 |
| 1BT_16_3 | Explains the relationship between structure and function of eukaryotic cell organelles. | 1BT_W10<br>1BT_W11 | 3<br>3 |
| 1BT_16_4 | Uses the basic microscopic methods for the analysis of structure and function of eukaryotic cells. | 1BT_U04 | 5 |
| 1BT_16_5 | Able to prepare the specimens for observation in light microscopy. | 1BT_U04<br>1BT_U07<br>1BT_W13 | 5<br>4<br>5 |
| 1BT_16_6 | Presents the results of work in the form of reports. | 1BT_K09 | 5 |
| 1BT_16_7 | Recognizes the need for continuous improvement of the knowledge on the biology of eukaryotic cells. | 1BT_K01<br>1BT_U02 | 5<br>5 |
| 1BT_16_8 | Discusses the possibility of using the knowledge of cell biology in biology, biotechnology and related fields. | 1BT_K01 | 5 |
| 1BT_16_9 | The responsibility for the equipment, their own work and the work of other. | 1BT_W23 | 5 |

**3. Module description**

| Description | |
|---|---|

| | |
|---|---|
| | Module "Cell Biology" familiarize the student with the structure and functioning of eukaryotic cells. Students will acquire knowledge on the structure and function of all eukaryotic cell compartments of both plant and animal. Students will learn about the mechanisms of functioning of cells and the basics of their differentiation. The student learns the principles of working with the light microscope and stereomicroscope and the basis of preparation of biological material and the methods used in cell biology. |
| **Prerequisites** | Basic knowledge of the plant and animal organisms structure. |

**4. Assessment of the learning outcomes of the module**

| code | type | description | learning outcomes of the module |
|---|---|---|---|
| 1BT_16_w_1 | written test | The written work for checking the level of understanding, knowledge and skills | 1BT_16_1, 1BT_16_2, 1BT_16_3 |
| 1BT_16_w_2 | continuous assessment of student's activity | Assessment will be subjected to practical activities such as: ability to prepare material for light microscopy studies, knowledge of working with a light microscope and principles of microscopy, the ability to analyze problems and ability to get conclusion from students own observations. | 1BT_16_2, 1BT_16_3, 1BT_16_4, 1BT_16_5, 1BT_16_6, 1BT_16_7, 1BT_16_9 |
| 1BT_16_w_3 | report from the laboratory work | The student team prepares a report that describes how experiment/observations was carried out, the effects and conclusions of the experiments. | 1BT_16_4, 1BT_16_5, 1BT_16_6 |
| 1BT_16_w_4 | exam | Prerequisites to accession to the exam is completion of the laboratory and the report; written exam covers the topics discussed during the lectures. Written verification of knowledge of the module - the content of lectures, laboratories, basic and supplementary literature. Written verification of knowledge of the module - the content of lectures, laboratories, basic and supplementary literature. | 1BT_16_1, 1BT_16_2, 1BT_16_3, 1BT_16_8 |

**5. Forms of teaching**

| code | form of teaching | | | required hours of student's own work | | assessment of the learning outcomes of the module |
|---|---|---|---|---|---|---|
| | type | description (including teaching methods) | number of hours | description | number of hours | |
| 1BT_16_fs_1 | lecture | lecture concerns selected topics from eukaryotic cell biology with the use of audio-visual aids - multimedia presentations to illustrate the issues discussed. | 30 | Individual acquisition of knowledge; work with basic, recommended in the literature in the syllabus and supplementary literature. | 30 | 1BT_16_w_4 |
| 1BT_16_fs_2 | laboratory classes | Work under the direction and supervision of lecturer - the acquisition of practical skills in the preparation of biological material based on the instructions. Analysis of specimens in light microscopy; analysis and documentation of obtained results (note, drawing), discussion.<br>Consultations: Individual work with the student - solving the problems possed by the | 60 | Acquiring knowledge from lectures, work with the textbook, supplementary reading. | 50 | 1BT_16_w_1, 1BT_16_w_2, 1BT_16_w_3 |

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|---|---|---|---|---|---|---|
| | | student | | | | |