COURSE DESCRIPTION (SYLLABUS)

1.	Course: **The birth of the cell – molecular mechanisms of organelle biogenesis-researcher's point of view**
2.	Language of instruction: **English**
3.	Faculty: **Faculty of Biotechnology**
4.	Course/module code: **29-BT-S2-E3-NarkoE**
5.	Course/module type (*mandatory* or *elective*): **elective**
6.	Programme: **Medical Biotechnology**
7.	Study cycle: **2nd**
8.	Year: **2nd**
9.	Semester *(autumn* or *spring):* **autumn**
10.	Form of tuition and number of hours: **Lecture: 15 h**
11.	Name, Surname, academic title: **Łukasz OPALIŃSKI; PhD**
12.	Initial requirements (knowledge, skills, social competences) regarding the course/module and its completion: **Basic knowledge of cell biology and techniques used in this field.**
13.	Objectives: **Understand molecular mechanisms of protein transport, vesicle formation and trafficking, organelle division, inheritance and motility; Become familiar with up to date knowledge and techniques used in the cell biology/biotechnology; Learn current state of knowledge about organelle biogenesis; Become familiar with how the top research is done; Initiate critical thinking and creativity in students research; Initiate in students curiosity-based approach in molecular sciences**
14.	Content: **Following questions will be answered:** • **How selected organelles are formed in the cell?**

<table>
<tr><td></td><td colspan="2">

- **What are the mechanisms supplying organelles with new set of macromolecules?**
- **How, on the molecular scale, organelles divide and are segregated in the cell?**
- **Do organelles directly contact each other?**
- **How proteins are sorted in the cell?**
- **What are the consequences of organelle biogenesis failure for human body?**
- **How we can use the basic knowledge about cell architecture for medical biotechnology applications?**

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<tr><td>15.</td><td>Learning outcomes:
Student:

- **provides qualitative and quantitative descriptions of complex biological phenomena and processes;**
- **consistently applies and disseminates the principle of strict interpretation of biological phenomena and biochemical processes in research and practical activities which are based on empirical data;**
- **possess advanced knowledge of medical and biological sciences, namely biomedicine and molecular biology;**
- **possess knowledge of the current issues prevailing in scientific literature;**
- **efficiently makes use of scientific literature in the field of biomedicine and biotechnology; reads professional literature in English;**
- **understands the need for a systematic review of professional literature in order to broaden and deepen his or her knowledge.**

</td><td>Outcome symbols:

K_W01
K_W02
K_W03
K_W05
K_U02
K_K05</td></tr>
<tr><td>16.</td><td colspan="2">Recommended literature:
Up to date scientific literature in form of review and experimental publications.</td></tr>
<tr><td>17.</td><td colspan="2">Methods of verification of the assumed learning outcomes:
Design of the scientific mini-project concerning the subject of the course (1 page A4).</td></tr>
<tr><td>18.</td><td colspan="2">Conditions of earning credits:
Positive evaluation of the mini-project by the Lecturer + scientific discussion on the project with the Lecturer.</td></tr>
<tr><td rowspan="4">19.</td><td colspan="2">Student’s workload:</td></tr>
<tr><td>Activity</td><td>Number of hours for the activity</td></tr>
<tr><td>Hours of instruction (as stipulated in study programme) :
lecture</td><td>15 h</td></tr>
<tr><td>Student’s own work:

- **preparations before lectures,**
- **reading of relevant literature,**
- **development of the mini-project.**

</td><td>15 h</td></tr>
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	Total number of hours:	**30 h**
	Number of ECTS:	**2 ECTS**