

## COURSE DESCRIPTION (SYLLABUS)

1.	Course: <b>Structure and Function of Biomacromolecules</b>
2.	Language of instruction: <b>English</b>
3.	Faculty: <b>Faculty of Biotechnology</b>
4.	Course/module code: <b>29-BT-S1-E2-EnSFBc</b>
5.	Course/module type ( <i>mandatory or elective</i> ): <b>mandatory</b>
6.	Programme: <b>Biotechnology</b>
7.	Study cycle ( <i>1st/2nd</i> ): <b>1st cycle</b>
8.	Year: <b>1st</b>
9.	Semester ( <i>autumn or spring</i> ): <b>spring</b>
10.	Form of tuition and number of hours: Learning methods: Laboratory: <b>75 h</b>
11.	Name, Surname, academic title: <b>Dorota Maszczak-Seneczko, PhD</b>
12.	Initial requirements ( <i>knowledge, skills, social competences</i> ): <ul style="list-style-type: none"><li>• <b>ability to carry out basic biochemical calculations;</b></li><li>• <b>ability to work in the laboratory (e.g. pipetting, weighing, usage of centrifuge, usage of spectrophotometer).</b></li></ul>
13.	Objectives: <ul style="list-style-type: none"><li>• <b>Knowledge of the structure and functions of proteins, carbohydrates, lipids and nucleic acids.</b></li><li>• <b>Experimental skills in the analysis of proteins, carbohydrates, lipids and nucleic acids.</b></li></ul>
14.	Content: <ul style="list-style-type: none"><li>• <b>Quantitative and qualitative analysis of proteins, carbohydrates, lipids and nucleic acids. Extraction of proteins, lipids and nucleic acids from biological materials.</b></li></ul>

	<ul style="list-style-type: none"> <li>Acquiring the advanced knowledge about structure and function of proteins, carbohydrates, lipids and nucleic acids. Learning the nomenclature and techniques used in protein, lipid and carbohydrate biochemistry. Developing the ability of using the professional literature dealing with structure and functions of proteins, carbohydrates, lipids and nucleic acids. Developing the independent learning skills. The knowledge of basic biochemical methods and experimental techniques. Ability to work as a team, work together to solve problems and perform laboratory experiments. Knowledge and ability to follow laboratory safety rules.</li> </ul>	
15.	<p>Learning outcomes:</p> <p>Student:</p> <ul style="list-style-type: none"> <li>applies basic concepts and terms used in biochemistry;</li> <li>characterizes basic techniques and research tools used in biochemistry;</li> <li>applies basic physical, chemical and biochemical techniques necessary for demonstrating the specific properties of biomacromolecules;</li> <li>learns given subjects in biochemistry by himself;</li> <li>works as a part of team to solve problems and perform scientific experiments;</li> <li>understands the need for careful planning of tasks and scientific experiments;</li> <li>follows the rules of health and safety at work.</li> </ul>	<p>Outcome symbols:</p> <p>K1_W06</p> <p>K1_W08</p> <p>K1_U01</p> <p>K_U12</p> <p>K1_U13</p> <p>K1_K03</p> <p>K1_K05</p>
16.	<p>Recommended literature:</p> <ul style="list-style-type: none"> <li>JM. Berg, JL Tymoczko, L. Stryer, Biochemistry, Palgrave Macmillan, 2011.</li> <li>Specific instructions delivered by the coordinators of the respective modules.</li> </ul>	
17.	<p>Methods of verification of the assumed learning outcomes</p> <ul style="list-style-type: none"> <li>pre-lab tests</li> <li>written tests</li> </ul>	
18.	<p>Conditions of earning credits:</p> <ul style="list-style-type: none"> <li>active participation in laboratory classes</li> <li>obtaining an average grade from pre-lab tests and written tests as indicated in the rules and regulations of the course</li> </ul>	
19.	Student's workload:	
	Activity	Number of hours for the activity
	<p>Hours of instruction (as stipulated in study programme) :</p> <ul style="list-style-type: none"> <li>laboratory classes</li> <li>consultations</li> </ul>	75 h

	Student's own work: <ul style="list-style-type: none"><li>• <b>studying before the classes</b></li><li>• <b>preparation for the test</b></li></ul>	25 h
	Total number of hours:	<b>100 h</b>
	Number of ECTS:	<b>4 ECTS</b>