

Karta przedmiotu / Course description

Informacje ogólne o przedmiocie / General information about the course	
1. Kierunek studiów / Major of study: Medical biotechnology	2. Poziom kształcenia / Study level: 2-nd degree 3. Forma studiów / Form of study: full-time course
4. Rok / Year: I	5. Semestr / Semester: II
6. Nazwa przedmiotu / Course name: Biochemical aspects of human body functioning	
7. Status przedmiotu / Course status: obligatory	
8. Jednostka realizująca przedmiot, adres, e-mail: Name of Department, mailing address, e-mail: Department of Biochemistry, Jedności 8, 41-200 Sosnowiec, Poland, Faculty of Pharmaceutical Sciences in Sosnowiec, Medical University of Silesia, Katowice, Poland e-mail: mkapral@sum.edu.pl	
9. Treści programowe przedmiotu Course contents: The purpose of this course is to develop an understanding of the molecular structure of the body and metabolic processes and their relationship to specific physiological states in the human body. The scope of teaching includes relationships between biochemical transformations and mechanisms of regulation of these processes.	
10. liczba godzin z przedmiotu / Number of hours for the course	20
11. liczba punktów ECTS dla przedmiotu / Number of ECTS points for the course	2
12. Formy i tematy zajęć / Forms and topics of classes	Liczba godzin Number of hours
12.1. Lectures	
12.2. Seminars	
S1 Biochemistry of starvation, satiety and obesity.	1
S2 Metabolism of Muscle at Rest and During Exercise.	1
S3 Biochemical processes involved in the generation of reactive oxygen species.	1
S4 Cancer cells biochemistry.	1
S5 Prediction of physical and chemical properties of ligands as potential drugs using in silico techniques.	1
12.3 Laboratory classes	
C1 Determination of metabolic enzyme activity in liver homogenate.	3
C2 To study the effect of type and concentration of antioxidant components and reaction conditions on the inactivation capacity of reactive oxygen species.	3
C3 Determination of the influence of selected drugs on cancer cells metabolism (part I).	3
C4 Determination of the influence of selected drugs on cancer cells metabolism (part II)	3
C5 Online docking of ligands to protein structures. Analysis of the effects of exogenous substances on the body using network and drug repositioning.	3
13. Literatura / Readings	
1. D Nelson, M Cox Lehninger: Principles of Biochemistry, 6th edition, 2013.	
2. RK Murray, DK Granner, PA Mayes, VW Rodwell Harper's Illustrated Biochemistry 27th Edition, 2006	
3. M Lieberman, A Peet Marks' Basic Medical Biochemistry 5th Edition, 2017	
14. Kryteria oceny – szczegóły / Detail evaluation criteria	
Zgodnie z zaleceniami organów kontrolujących / In accordance with the recommendations of the inspection bodies	
Zaliczenie przedmiotu - student osiągnął zakładane efekty uczenia się / Completion of the course – student has achieved the assumed learning outcomes	

Szczegółowe kryteria zaliczenia i oceny z przedmiotu są zamieszczone w regulaminie przedmiotu / [Detail criteria for completion and evaluation of the course are specified in the course regulations](#)