

**KARTA PRZEDMIOTU****I. Dane podstawowe**

Nazwa przedmiotu	Laboratory techniques in protein purification
Nazwa przedmiotu w języku angielskim	Laboratory techniques in protein purification
Kierunek studiów	Biotechnologia
Poziom studiów (I, II, jednolite magisterskie)	II
Forma studiów (stacjonarne, niestacjonarne)	stacjonarne
Dyscyplina	Nauki biologiczne
Język wykładowy	Język angielski

Koordinator przedmiotu/osoba odpowiedzialna	Dr inż. Andrea Baier
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Forma zajęć ( <i>katalog zamknięty ze słownika</i> )	Liczba godzin	semestr	Punkty ECTS
Wykład	30	II	2
konwersatorium			
Ćwiczenia			
Laboratorium			
Warsztaty			
Seminarium			
proseminarium			
Lektorat			
Praktyki			
zajęcia terenowe			
pracownia dyplomowa			
Translatorium			
wizyta studyjna			

Wymagania wstępne	Completed courses: microbiology, biochemistry
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**II. Cele kształcenia dla przedmiotu**

Basic methods used in microbiology, biochemistry and molecular biology

## III. Efekty uczenia się dla przedmiotu wraz z odniesieniem do efektów kierunkowych

Symbol	Opis efektu przedmiotowego	Odniesienie do efektu kierunkowego
<b>WIEDZA</b>		
W_01	knows the specific terminology used in biotechnology, understands and is able to define complex phenomena and processes occurring in living organisms	K_W01
W_02	has advanced knowledge of biochemistry, microbiology and biology necessary for practical use in biotechnological processes used in various branches of industry	K_W02
<b>UMIEJĘTNOŚCI</b>		
U_01	proficiently uses literature in the field of natural sciences in English, shows knowledge in specialised vocabulary in the field of biotechnology, uses modern foreign language at level B2+	K_U02
U_02	displays the ability to prepare oral presentations and communicate with diverse audiences using various media, initiates and conducts a debate on specialised topics	K_U05
U_03	regularly updates the knowledge in natural sciences and knows its practical application, understands the need to follow regularly the scientific literature as well as to familiarize himself with scientific journals to deepen his knowledge	K_U16
U_04	has deepened awareness of level of his knowledge and skills, understands the need for continuous personal and professional development and is open to modern technologies used in biotechnology and guides others in this regard	K_U17
<b>KOMPETENCJE SPOŁECZNE</b>		
K_01		

## IV. Opis przedmiotu/ treści programowe

Protein properties, bacterial and yeast plasmids, cloning strategies, methods used in protein purification, methods used for separation of proteins, methods used for desintegration of cells, basic equipment used in biochemistry

## V. Metody realizacji i weryfikacji efektów uczenia się

Symbol efektu	Metody dydaktyczne (lista wyboru)	Metody weryfikacji (lista wyboru)	Sposoby dokumentacji (lista wyboru)
<b>WIEDZA</b>			
W_01	Conventional lecture	Written test	Evaluated test
W_02	Conventional lecture	Written test	Evaluated test
<b>UMIEJĘTNOŚCI</b>			
U_01	Textual Analysis	Written test	Evaluated test
U_02	Textual Analysis	presentation	Presentation rating card
U_03	Textual analysis	Written test	Evaluated test
U_04	discussion	Written test	Evaluated test
<b>KOMPETENCJE SPOŁECZNE</b>			
K_01			

**VI. Kryteria oceny, wagi...**

written test

- Very good (5)** - the student realizes the assumed learning outcomes at a very good level  
- the student demonstrates knowledge of the education content at the level of 95-100%
- over good (4.5)** - the student accomplishes the assumed learning outcomes an over good level  
- the student demonstrates knowledge of the education content at the level of 85-94 %
- good (4)** - the student accomplishes the assumed learning outcomes at a good level  
- the student demonstrates knowledge of the education content at the level of 75-84%
- Quite good (3.5)** - the student accomplishes the assumed learning outcomes at a quite good level  
- the student demonstrates knowledge of the education content at the level of 65-75%
- sufficient (3)** - the student accomplishes the assumed learning outcomes at a sufficient level  
- the student demonstrates knowledge of the education content at the level of 51-64%
- insufficient (2)** - the student accomplishes the assumed learning outcomes at an insufficientlevel  
- the student demonstrates knowledge of the education content below the level of 51%

**VII. Obciążenie pracą studenta**

Forma aktywności studenta	Liczba godzin
Liczba godzin kontaktowych z nauczycielem	<b>30</b>
Liczba godzin indywidualnej pracy studenta	<b>30</b>

**VIII. Literatura**

Literatura podstawowa
Gallagher S.R., E.A. Wiley: Current Protocols Essential Laboratory Techniques. Wiley, 2008
Kreuzer H., A. Massey: Molecular Biology and Biotechnology. ASM Press, Washington DC, 2008
Literatura uzupełniająca
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