

COURSE OFFERED

Name of the course	Polish	Antygeny bakterii
	English	Bacterial Antigens

1. LOCATION OF THE COURSE OF STUDY WITHIN THE EDUCATION SYSTEM

1.1. Section¹	Exact and Natural Sciences
1.2. Discipline²	Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences
1.3. Type of education	Stationary
1.4. Level of education	Doctoral School
1.5. Person preparing the course description	Prof. Wiesław Kaca
1.6. Contact	Wieslaw.kaca@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Type of course³	specialized subjects in the discipline
2.2. Language of the course	English

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Type of classes⁴		Lecture
3.2. The number of hours⁵		15h
3.3. Location of classes		Classes in the UJK teaching room
3.4. Type of assessment		Conformation with notes
3.5. Didactic methods		Lectures, material evaluation , projects
3.6. Literature	basic	Author own publication on endotoxins subject
	supplementary	https://microbiologyinfo.com/benedicts-test-principle-composition-preparation-procedure-and-result-interpretation/

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDEND LEARNING OUTCOMES

4.1. Course objectives (including the form of classes)
C01 Understanding chemical structures and biosynthesis of Gram-negative bacterial endotoxina
C02 The Role of polysaccharide part of endotoxin in vaccines.
C03 Biological activities of Lipid A part of endotoxins, its detection and entotoxin shock prevention
4.2. Syllabus content
Lectures

¹ Section of Humanities:, Social Sciences, Section of Exact and Natural Sciences, Section of Medical and Health Sciences, Section of Arts.

² History,Linguistics, Literary Studies, Medical Sciences, Health Sciences, Political and Administrative Sciences, Legal Sciences, Security Sciences, Pedagogy, Communication and Media Studies, Management and Quality Studies, Biological Sciences, Chemical Sciences, Physical Sciences, Earth and related Environmental Sciences, Visual Arts and Artwork Conservation, Musical Arts.

³ General courses, domain specific subjects in the section, disciplinary subjects in the sections, specialized subjects in the discipline.

⁴ Classes, lecture, seminar.

⁵ Consistent with the education program at the Doctoral School
Jan Kochanowski University in Kielce.

Endotoxin chemical structures on exemplars of *Proteus mirabilis* LPSs (endotoxins). Biosynthesis of Lipid A, core oligosaccharide and O-specific polysaccharides. Chemical methods of LPSs structures elucidation and antigenic properties tested. Immunochemical methods for endotoxins antigenic elucidation. Limulus Amebocyte Lysate test for endotoxin detection. Prevention of endotoxemia methods.

Classes

Students presented projects , related with their PhD studies, dealing with endotoxin detection methods, biological activities or serological specificity testing.

5. SUBJECT LEARNING OUTCOMES

Learning outcomes	A doctoral student who has passed the subject:	Reference to the learning outcomes of Doctoral School (according to the training program at the Doctoral School)
in the area of KNOWLEDGE:		
W01	The doctoral student possesses in-depth knowledge of the latest scientific achievements, encompassing theoretical foundations, general issues, and selected specific topics relevant to the scientific or artistic discipline in which the doctoral dissertation is being prepared	SD_W01
W02	The doctoral student has advanced knowledge of development trends in disciplines related to the research or project theme being pursued	SD_W02
W03	The doctoral student is able to formulate significant, current, and unresolved issues in the field of science in which they are studying, particularly in the discipline where the doctoral dissertation is being prepared, including in a foreign language.	SD_W07
in the area of SKILLS:		
U01	The doctoral student can define the goal and subject of research or project activities, as well as formulate research hypotheses in the discipline where the doctoral dissertation is being prepare	SD_U01
U02	The doctoral student is capable of utilizing knowledge from various disciplines to identify, formulate, and creatively solve complex problems or undertake research or project tasks.	SD_U03
U03	The doctoral student can effectively use a foreign language in research or project activities	SD_U07
in the area of SOCIAL COMPETENCE:		
K01	The doctoral demonstrates entrepreneurial thinking and actively takes initiative.	SD_K04

6. METHODS OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

SUBJECT LEARNING OUTCOMES	METHOD OF ASSESSMENT (+/-)																				
	Oral/written exam			Test			Project			activity in class			Own work			Group work			Others		
	The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes			The type of classes		
	L	E	S	L	E	S	L	E	S	L	E	S	L	E	S	L	C	S	L	C	S
W01					+			+			+			+							
W02					+			+			+			+							
W03					+			+			+			+							
U01					+			+			+			+							
U02					+			+			+			+							
U03					+			+			+			+							
K01					+			+			+			+							

7. CRITERIA OF ASSESSMENT OF THE INTENDED LEARNING OUTCOMES

Form of classes	Grade	Criterion of assessment
Lecture (L) ⁶	3,0	Achieving 51-60% possible points from test, activity on exercises and own work
	3,5	Achieving 61-70% possible points from test, activity on exercises and own work
	4,0	Achieving 71-80% possible points from test, activity on exercises and own work
	4,5	Achieving 81-90% possible points from test, activity on exercises and own work
	5,0	Achieving 91-100% possible points from test, activity on exercises and own work

Accepted for execution

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⁶ Niepotrzebne usunąć.