Attachment No. 5 to Rector's ordinance No. 22/2020

DESCRIPTION OF THE COURSE OF STUDY

Course code	**0719-2ID-C18-M1**	
Name of the course in	Polish	**Matematyka 1**
	English	**Mathematics 1**

1. LOCATION OF THE COURSE OF STUDY within the system of studies

1.1. Field of study	Data engineering
1.2. Mode of study	Full time studies
1.3. Level of study	First level studies
1.4. Profile of study*	General academic studies
1.5. Person/s preparing the course description	Hubert Przybycień
1.6. Contact	hprzybycien@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE course of study

2.1. Language of instruction	english
2.2. Prerequisites*	Basic Mathematics

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. **Form of classes**		Lectures, seminars
3.2. **Place of classes**		classes in the teaching rooms of UJK
3.3. **Form of assessment**		exam(lecture), passing with a note (seminar)
3.4. **Teaching methods**		lecture – problem lecture, seminar - group discuss, solving tasks
3.5. **Bibliography**	**Required reading**	1. W. Krysicki, *Problems and methods in analysis*, Pergamon 1966. 2. W. Krysicki, L. Wlordarski, A. J. Zielicki, D. Konstant, *Problems and methods in analysis vol.2*, Pergamon 1966.
	Further reading	1. Strang G., Calculus. MIT. Cambridge1991 https://ocw.mit.edu/ans7870/resources/Strang/Edited/Calculus/Calculus.pdf

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives *(including form of classes)*

Knowledge

C1 - familiarization with integral calculus of one and many variables and with selected types of differential equations, introduction to the basics of differential calculus of many variables.

Skills

C2 - developing skills in operating with concepts of mathematical analysis: limits, derivatives of functions of many variables, calculating integrals and their applications**.**

Social competencies

C3 - inspiring activity in deepening the understanding of concepts of mathematical analysis.

4.2. Detailed syllabus *(including form of classes)*

Lectures

Integral calculus of functions of one variable. Differential calculus of functions of several variables. Elements of optimization. Multiple integrals. Introduction to differential equations.

Classes

Integral calculus of functions of one variable. Differential calculus of functions of several variables. Elements of optimization. Multiple integrals. Introduction to differential equations.

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes

within the scope of **KNOWLEDGE:**		
W01	Knows the basic concepts of mathematical analysis: in particular, the concept of limit, derivative, and integral for functions of one and several variables and their selected applications.	ID1A_W01
within the scope of **ABILITIES:**		
U01	Is able to use the tools and notions of mathematical analysis to formulate and solve problems from selected fields of science and technology, Also can interpret and explain phenomena using functions of one and several variables.	ID1A_U01 ID1A_U05
U02	is able to solving a typical problems related to determining limit values and extreme values of functions, as well as applications of integrals.	ID1A_U08
within the scope of **SOCIAL COMPETENCE:**		
K01	understands the social aspects of the practical application of acquired knowledge and the need to popularize selected achievements of science and technology	ID1A_K03
...		

4.4. **Methods of assessment of the intended learning outcomes**

Teaching outcomes *(code)*	**Method of assessment (+/-)**																				
	Exam oral/written*			**Test***			**Project***			**Effort in class***			**Self-study***			**Group work***			**Others* e.g. standardized test used in e-learning**		
	Form of classes			***Form of classes***			***Form of classes***			***Form of classes***			***Form of classes***			***Form of classes***			***Form of classes***		
	L	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*	*L*	*C*	*...*
W01	+																				
U01					+																
U02					+																
K01					+																
...																					

delete as appropriate

4.5. **Criteria of assessment of the intended learning outcomes**

Form of classes	**Grade**	**Criterion of assessment**
lecture (L) (including e-learning)	**3**	**achieving <50-60)% of the requirements**
	3,5	**achieving <60-70)% of the requirements**
	4	**achieving <70-80)% of the requirements**
	4,5	**achieving <80-90)% of the requirements**
	5	**achieving <90-100>% of the requirements**
classes (C)* (including e-learning)	**3**	**achieving <50-60)% of the requirements**
	3,5	**achieving <60-70)% of the requirements**
	4	**achieving <70-80)% of the requirements**
	4,5	**achieving <80-90)% of the requirements**
	5	**achieving <90-100>% of the requirements**

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	**Student's workload**	
	Full-time studies	**Extramural studies**
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	***60***	
*Participation in lectures**	***30***	
*Participation in classes, seminars, laboratories**	***30***	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	***40***	
*Preparation for the lecture**	***7***	
*Preparation for the classes, seminars, laboratories**	***20***	
*Preparation for the exam/test**	***13***	
TOTAL NUMBER OF HOURS	***100***	
ECTS credits for the course of study	***4***	

delete as appropriate

Accepted for execution *(date and legible signatures of the teachers running the course in the given academic year)*

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