

## SUBJECT CARD

### 1. Basic information

<b>Subject</b>	<b>Mathematics for Economists</b>
Faculty	Faculty of Law
Field of studies	International Relations
Specialization	international business
PRK level	6 PRK
Education level	first-cycle studies
Form of studies	full-time studies
Group of activities	—
Number of ECTS points	3
Type of subject	specialization
Total number of hours	30 h
Didactic cycle	2024/2025 winter
Academic semester	2
Academic year	1
Education profile	general academic
Year of implementation	2024/2025
Language of instruction	English
Teacher(s)	dr Piotr Staliński

### Semester, number of ECTS points, type of subject, number of hours

Semester	Lecture	Class	ECTS
2	15 godz.	15 godz.	3

### 2. General objectives

<b>C1</b>	The objective of this course is to help students acquire basic mathematical skills needed to succeed in undergraduate courses in micro and macroeconomics, finance, operations management, and other quantitative subjects. The topics include: matrix algebra and systems of linear equations, functions and their properties, and differential calculus and its applications.
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### 3. Introductory requirements

High school algebra.

### 4. Learning outcomes

<b>W1</b>	Knowledge: has a practical knowledge of algebraic symbols, terms, and operations.
<b>W2</b>	Knowledge: to solve small-scale systems of linear equations using concepts of matrix algebra.
<b>W3</b>	Knowledge: to examine and make practical use of the elementary functions properties.
<b>W4</b>	Knowledge: to apply differential calculus techniques to examine properties of functions.
<b>U1</b>	Skills: Students can apply mathematical tools of linear algebra and calculus to formulate and solve mathematical or economical problems and interpret results.
<b>K1</b>	Social competence: Students have attitudes towards mathematics, such as: beliefs about mathematics and its usefulness, interest and enjoyment in learning mathematics, confidence in using mathematics, perseverance in solving a problem. Students respect teachers and other students and can learn cooperatively and independently.

### 5. Course program

#### Lecture (15 h)

Code	Detailed description of the topic blocks (semester: 2)
Wyk1	Introductory topics: elementary mathematical symbols and operations.
Wyk2	Matrix algebra and systems of linear equations.
Wyk3	Functions, their properties, and applications.
Wyk4	The concept of the derivative. The application of derivatives to examine properties of functions.
Wyk5	The single-variable optimization using differential calculus.

#### Class (15 h)

Code	Detailed description of the topic blocks (semester: 2)
Cw1	Matrix algebra and systems of equations.
Cw2	Functions, their properties and applications.
Cw3	The derivatives and their applications to examine properties of functions.

### 6. Didactic methods

Lecture	
<b>M18</b>	Problem solving
<b>M20</b>	Lecture
Class	
<b>M16</b>	Group work
<b>M18</b>	Problem solving
<b>M20</b>	Lecture

### 7. Student workload

Number of hours under supervision	Student workload
Lecture	15 h
Including e-learning:	0 h

<b>Class</b>	<b>15 h</b>
<b>Including e-learning:</b>	<b>0 h</b>

<b>Student's own work</b>	
	<b>45 h</b>

<b>Total workload</b>	
Total number of hours for the course	<b>75 h</b>
Total number of ECTS points	<b>3 ECTS</b>

## 8. Conditions for course completion

Course completion criteria

The workshop test (a mark of at least 3.0 at Workshop is required to be admitted to the Exam).

The exam.

Both the workshop test and the exam involve problem solving.

<b>Lectures (Final exam / Final pass)</b>	
<b>Grade 5:</b>	88-100 pkt.
<b>Grade 4,5:</b>	80-87 pkt.
<b>Grade 4:</b>	70-79 pkt.
<b>Grade 3,5:</b>	60-69 pkt.
<b>Grade 3:</b>	45-59 pkt.

<b>Class</b>	
<b>Grade 5:</b>	88-100 pkt.
<b>Grade 4,5:</b>	80-87 pkt.
<b>Grade 4:</b>	70-79 pkt.
<b>Grade 3,5:</b>	60-69 pkt.
<b>Grade 3:</b>	45-59 pkt.

## 9. Literature

### Basic literature

1. Sydsaeter, K, Hammond, P, Essential Mathematics For Economic Analysis, Prentice Hall, 2012 (electronic version available)

### Supplementary literature

1. Banaś, J., Podstawy matematyki dla ekonomistów, Wydawnictwa Naukowo-Techniczne, W-wa, 2005.

## 11. Information about academic teachers

### The person responsible for the card

dr Piotr Staliński (e-mail: pstalinski@uafm.edu.pl)

### Teacher(s) conducting the subject

dr Piotr Staliński (e-mail: pstalinski@uafm.edu.pl)