

MODULE DESCRIPTION

Module code	Z-0324
Module name	Repetytorium z matematyki
Module name in English	Revision Course in Mathematics
Valid from academic year	2016/2017

A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	Management and Production Engineering
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	All
Unit conducting the module	Department of Applied Computer Science and Applied Mathematics
Module co-ordinator	Leszek Hozejowski, PhD
Approved by:	

B. MODULE OVERVIEW

Type of subject/group of subjects	Basic <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	English
Module placement in the syllabus - semester	1st semester
Subject realisation in the academic year	Winter semester <i>(winter semester/ summer)</i>
Initial requirements	No requirements <i>(module codes / module names)</i>
Examination	No <i>(yes / no)</i>
Number of ECTS credit points	2

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	10	10			

C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	Review and repetition of high school mathematics.
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Effect symbol	Teaching results	Teaching methods <i>(l/c/lab/p/other)</i>	Reference to subject effects	Reference to effects of a field of study
W_01	A student knows basic rules concerning transformations on algebraic expressions.	l/c	K_W01	T1A_W01
W_02	A student knows the rules for solving equations (algebraic, rational, exponential, logarithmic and trigonometric).	l/c	K_W01	T1A_W01
W_03	A student knows a function of single variable, its properties. He knows the graphs of elementary functions.	l/c	K_W01	T1A_W01
U_01	A student can fluently make algebraic calculations and solve equations and inequalities (algebraic, rational, exponential, logarithmic and trigonometric).	l/c	K_U01	T1A_U01
U_02	A student can find natural domains of elementary functions. He can plot functions and transform the graph (reflection symmetry, translation) and derive the properties of a function from a graph.	c	K_U02	T1A_U02
K_01	A student is aware of the need of broadening his knowledge of mathematical methods when it is needed in his job	l/c	K_K01	T1A_K01
K_02	A student understands the importance of the links between mathematics and engineering and other areas beyond engineering practice.	l/c	K_K02	T1A_K02

Teaching contents:

1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Order and properties of algebraic operations. Short multiplication formulas. Transformations on algebraic expressions. Dividing polynomials.	W_01 U_01 U_02 K_01 K_02
2	Elementary functions (linear, quadratic, rational, power, exponential, logarithmic) and their graphs.	W_02 W_03 U_01 U_02 K_01 K_02
3	Linear, quadratic, and rational equations and inequalities.	W_02 W_03 U_01 U_02 K_01
4	Infinite sequences.	W_02 W_03

		U_01 U_02 K_01 K_02
5	Written test.	

2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module
1	Order and properties of algebraic operations. Short multiplication formulas. Transformations on algebraic expressions. Dividing polynomials.	W_01 U_01 U_02 K_01 K_02
2	Plotting linear, quadratic, rational, power, exponential and logarithmic functions.	W_01 U_01 U_02 K_01 K_02
3	Trigonometric functions and their properties.	W_02 W_03 U_01 U_02 K_01
4	Equations and inequalities (linear, quadratic, higher-order algebraic, rational).	W_02 W_03 U_01 U_02 K_01 K_02
5	Written test	

3. Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module

4. The characteristics of project assignments

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A written test; observing a student's involvement during the classes.
W_02	A written test; observing a student's involvement during the classes.
U_01	A written test; observing a student's involvement during the classes.
U_02	A written test; observing a student's involvement during the classes.
U_03	A written test; observing a student's involvement during the classes.

K_01	Observing a student's involvement during the classes; discussions during the classes.
K_02	Observing a student's involvement during the classes; discussions during the classes.

D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	10
2	Participation in classes	10
3	Participation in laboratories	
4	Participation in tutorials (2-3 times per semester)	
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	2
8		
9	Number of hours requiring a lecturer's assistance	22 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS point=25-30 hours)</i>	0.9
11	Unassisted study of lecture subjects	5
12	Unassisted preparation for classes	15
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	
15	Preparing reports	
15	Preparing for a final laboratory test	
17	Preparing a project or documentation	
18	Preparing for an examination	
19		
20	Number of hours of a student's unassisted work	30 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS point=25-30 hours)</i>	1.2
22	Total number of hours of a student's work	52
23	ECTS points per module <i>1 ECTS point=25-30 hours</i>	2
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	15
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS point=25-30 hours)</i>	0.2

E. LITERATURE

Literature list	<ol style="list-style-type: none"> 1. Sękalski S., Sękalska B., Sękalski M., Skóra M., Sztzechman T., <i>Repetitorium z matematyki</i>, Politechnika Świętokrzyska, Kielce 2004. 2. Gdowski B., Pluciński E., <i>Zbiór zadań z matematyki dla kandydatów na wyższe uczelnie</i>, WN-T, Warszawa 1990. 3. Kowalczyk Cz. E., <i>Matura z matematyki, zestawy zadań maturalnych obowiązujące w 1993</i>, Wydawnictwo „Kwadrat”, Radom 1994. 4. Łubowicz H., Wieprzkowicz B., <i>Zbiór zadań z matematyki</i>, WN-T, Warszawa 1994.
Module website	