Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm// Name: Metric Spaces

MEP/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 0/2/0 For the study period: 0/26/0

Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

The exam consists of a written part worth 80 points and an oral part worth 20 points. After adding up the results, the minimum and maximum scores required to earn for the individual grades are the following: minimum 91 points for A, 81-90 points for B, 71-80 points for C, 61-70 points for D and 51-60 points for E.

Results of education:

The student having taken the course is in the first place familiar with the definition of topological and metric spaces. He is able to generalize the conceptual system of real analysis related to limits. Thus, he has a good understanding of the theory of general Banach spaces arising in natural ways. He can declare the most important theorems, such as the Banach fixed-point theorem and is able to draw up the main steps of their proof.

Brief syllabus:

The concept of metric space. The Cartesian product of finite metric spaces. Environment of the point, open and closed sets. Topological space. Mapping limits. Sequence convergence. Cauchy sequences. Complete metric spaces. Compact and coherent metric spaces. Continuous mappings. Properties of functions continuous on compact coherent sets. The Banach fixed-point theorem. An overview of the historical development of the function concept.

Literature:

T. Šalát: Metrické priestory, ALFA 1981. 291s.

G. J. Šilov: Matematická analýza, ALFA 1974. 431s.

Language, knowledge of which is necessary to complete a course:

Hungarian

Notes:

Evaluation of subjects

Total number of evaluated students: 80

A	В	С	D	E	FX
11.25	48.75	16.25	15.0	8.75	0.0

Teacher:

Date of last update: 02.04.2020	
Approved by:	

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/

Name: Differential Equations

DIF/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical **Recommended extent of course (in hours): Per week:** 0/2/0 **For the study period:** 0/26/0

Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

During the semester, students write two written tests, each worth 20 points. Following that, the exam consists of a written part, worth 40 points, and an oral part, worth 20 points. After adding up the results, the minimum and maximum scores required to earn for the individual grades are the following: minimum 91 points for A, 81-90 points for B, 71-80 points for C, 61-70 points for D and 51-60 points for E.

Results of education:

The student is able to model elementary processes of natural sciences with ordinary differential equations. He recognizes typical solvable differential equations and can find their solutions. Besides, he knows and is able to apply theorems related to the existence and uniqueness of solutions for general, first-order ordinary differential equations.

Brief syllabus:

Interpretation of the differential equation and its solution. Practical tasks in the areas of physics, chemistry and biology, the processes of which can be described by primary or secondary differential equations. Basic methods of solving ordinary differential equations in the class of explicit first order, homogeneous, exact and linear differential equations with separable variable. Solving method of the Bernoulli, Ricatti, Lagrange and Clairaut differential equations. Solving method of second order, linear differential equations with constant coefficients. Euler's second order differential equation with variable coefficients. Theorems related to the existence of local solutions for general, first-order differential equations and the uniqueness of their solution.

Literature:

- I. N. Bronstejn, K.A. Szemengyajev, G. Musiol, H. Mühlig: Matematikai kézikönyv, Typotex, 2002. 1210s. ISBN 963 9326 53 4.
- G. B. Thomas: Thomas-féle KALKULUS II. kötet, Typotex, 2010. 360 s. ISBN 978 963 279 159 3.

Language, knowledge of which is necessary to complete a course:

hungarian

Notes:

Evaluation of subjects

Total number of evaluated students: 31							
Α	В	С	D	Е	FX		
19.35	16.13	12.9	25.81	22.58	3.23		
Teacher:							
Date of last update: 02.04.2020							
Approved by:							

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/

Name: Didactics of Mathematics 1

DM1/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 1/2/0 For the study period: 13/26/0

Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 1.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

During the semester the student is actively involved in the learning process. The condition for passing the course is to develop and realize the teaching outputs according to the instructions the teacher and passing an oral examination.

Results of education:

The students will obtain an overview of the basic aims of mathematics education and educational goals of teaching mathematics. They have an opportunity to present their own vision of introducing selected concepts of mathematics.

Brief syllabus:

Cognitive process, its stages and deformation.

Child development and learning process.

Parallel of phylogeny and ontogeny of mathematical thinking.

Language of mathematics as a methodological problem, the volume concept.

Didactic analysis of thematic units: algebraic expressions, number theory, mathematical analysis, functions, infinitesimal analysis. The development of the basic concepts in these thematic units. Objectives of Mathematics, current status and topics of research. The objectives of the learning process in mathematics. The concept of mathematical education. Learning process in mathematics. Constructivism in mathematics taught. Motivation. Language of mathematics, its historical development and didactic meaning. The concept of number and the volume concept (integers, fractions, decimals, operations at the appropriate set of numbers). Classification in teaching mathematics.

Literature:

Hejný a kol.: Teória vyučovania matematiky 2, SPN, Bratislava, 1990. 560 s. ISBN 80-08-01344-3.

Učebnice matematiky pre 2. stupeň ZŠ a stredné školy

Szendrei J.: Gondolod, hogy egyre megy?, Typotex Kiadó, Budapest, 2005. 471 s. ISBN 963 9548 52 9.

Ambrus, A.: Bevezetés a matematikadidaktikába, ELTE, Budapest, 1995. 200 s. ISBN 0005023. Richard Skemp: A matematikatanulás pszichológiája, Budapest: Gondolat, 1975. 410 s. ISBN 963 280 218 7.

Časopisy: A matematika tanítása, Polygon

Language, knowledge of which is necessary to complete a course: hungarian, slovak						
Notes:						
Evaluation of so Total number of	ubjects f evaluated stude	nts: 117				
A	В	С	D	Е	FX	
24.79	23.93	31.62	17.09	2.56	0.0	
Teacher: Dr. ha	bil. RNDr. Peter	Csiba, PhD.				
Date of last upo	late: 02.04.2020			_		
Approved by:	,					

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/

Name: Didactics of Mathematics 2

DM2/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 1/2/0 For the study period: 13/26/0

Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

During the semester the student is actively involved in the learning process. The condition for passing the course is to develop and realize the teaching outputs according to the instructions the teacher and passing an oral examination.

Results of education:

Students will be prepared for situations that are experiencing the reality of school teaching in high school maths. They will be familiar with the various teaching techniques, methods of interpretation, they will work with textbooks and supplementary materials, testing various forms of written and oral exams. They learn to distinguish between expressions which help to students and which are harmful for teaching.

Brief syllabus:

Didactic analysis of specific thematic units: planimetry and stereometry, combinatorics, statistics and probability. Within these thematic units diagnostic analysis of student work and possible strategies of teachers' work. Motivation in teaching mathematics.

Error in mathematics. Textbook as a guide of teacher and as a assist of pupils. Evaluation and classification. Preparing, analyzing and correcting of written clearance and tests.

Literature:

Hejný a kol.: Teória vyučovania matematiky 2, SPN, Bratislava, 1990. 560 s. ISBN 80-08-01344-3.

Učebnice matematiky pre 2. stupeň ZŠ a stredné školy

Szendrei J.: Gondolod, hogy egyre megy?, Typotex Kiadó, Budapest, 2005. 471 s. ISBN 963 9548 52 9.

Ambrus, A.: Bevezetés a matematikadidaktikába, ELTE, Budapest, 1995. 200 s. ISBN 0005023. Richard Skemp: A matematikatanulás pszichológiája, Budapest: Gondolat, 1975. 410 s. ISBN 963 280 218 7.

Časopisy: A matematika tanítása, Polygon

Language, knowledge of which is necessary to complete a course:

hungarian, slovak

Notes:

Evaluation of subjects							
Total number of evaluated students: 113							
Α	В	С	D	Е	FX		
23.01	35.4	23.01	12.39	6.19	0.0		
T 1 D 1							

Teacher: Dr. habil. RNDr. Peter Csiba, PhD.

Date of last update: 02.04.2020

Name of the un	iversity: J. Selye	University					
Name of the fac	culty: Faculty of	Education					
Code: KMI/Md DM3/15	Code: KMI/Mdm/ Name: Didactics of Mathematics 3 DM3/15						
Form of study Recommended	: Lecture / Semin l extent of cours 2 / 0 For the stud						
Number of cred	lits: 5						
Recommended	semester/trimes	ster of study: 3.					
Level of study:	II.			_			
Prerequisites:							
Conditions for	passing the subj	ect:					
Results of educ	ation:						
Brief syllabus:							
Literature:							
Language, kno	wledge of which	is necessary to	complete a cour	rse:			
Notes:							
Evaluation of s Total number of	ubjects f evaluated stude	nts: 117					
A	В	С	D	Е	FX		
35.9	13.68	24.79	13.68	10.26	1.71		
Teacher: Dr. ha	bil. RNDr. Peter	Csiba, PhD.					
Date of last upo	late: 02.04.2020						
Approved by:				_			

Name of the un	niversity: J. Sely	e University					
Name of the fa	culty: Faculty of	Education					
Code: KMI/Md MS/15	ode: KMI/Mdm/ Name: Mathematical softwares S/15						
Form of study Recommende	: Lecture / Semi d extent of cour						
Methods of st		uy periou: 0 / 20	0 / 0				
Number of cree	dits: 3			=			
Recommended	semester/trime	ster of study: 3.					
Level of study:	II.						
Prerequisites:							
Conditions for	passing the sub	ject:					
Results of educ	eation:						
Brief syllabus:	,						
_	12 1 elektronic			árno : Univerzita ektronický zborní	•		
Language, kno	wledge of which	is necessary to	complete a cour	:se:			
Notes:							
Evaluation of s Total number o	ubjects f evaluated stude	ents: 22					
A	В	С	D	Е	FX		
27.27	18.18	22.73	13.64	13.64	4.55		
Teacher: Dr. ha	bil. RNDr. Peter	Csiba, PhD.					
Date of last up	date: 02.04.2020)					

Name of the un	iversity: J. Selye	e University					
Name of the fac	culty: Faculty of	Education					
Code: KMI/Md ODP/15	Code: KMI/Mdm/ ODP/15 Name: Master Thesis and its defence						
Form of study Recommended Per week: For Methods of str	d extent of cours r the study perioudy: present	se (in hours):	ities:				
Number of cree							
Recommended	semester/trimes	ster of study:					
Level of study:	II.						
Prerequisites:							
Conditions for	passing the subj	ject:					
Results of educ	ation:						
Brief syllabus:							
Literature:							
Language, kno	wledge of which	is necessary to	complete a cou	rse:			
Notes:							
Evaluation of s Total number of	ubjects f evaluated stude	nts: 7					
A	В	С	D	Е	FX		
14.29	42.86	14.29	0.0	14.29	14.29		
Teacher:							
Date of last upo	date: 02.04.2020						
Approved by:	,			-			

Name of the uni	iversity: J. Selye	e University				
Name of the fac	culty: Faculty of	Education				
Code: KMI/Mdr PPX2/15						
	: Seminar I extent of cours the study perio	se (in hours):	ities:			
Number of cred	lits: 4					
Recommended	semester/trimes	ster of study: 2.				
Level of study:	II.			_		
Prerequisites:						
Conditions for 1	passing the subj	ject:				
Results of educa	ation:					
Brief syllabus:						
Literature:						
Language, knov	wledge of which	is necessary to	complete a cou	rse:		
Notes:	,					
Evaluation of su Total number of	ubjects evaluated stude	nts: 77				
A	В	С	D	Е	FX	
92.21	1.3	0.0	0.0	6.49	0.0	
Teacher: doc. R	NDr. Ferdinánd	Filip, PhD., RNI	Dr. Zuzana Árki,	PhD.		
Date of last upd	late: 02.04.2020					
Approved by:	<u> </u>					

Name of the	:	. I Iniversity					
Name of the un							
Name of the fac	culty: Faculty of	Education					
Code: KMI/Mdr PPX4/15	Code: KMI/Mdm/ Name: Pedagogical Practice 4 PPX4/15						
Form of study Recommended	: Seminar I extent of cours r the study perio	` ,	ties:				
Number of cred	lits: 4						
Recommended	semester/trimes	ster of study: 4.					
Level of study:	II.			=			
Prerequisites:							
Conditions for	passing the sub	ject:					
Results of educ	ation:						
Brief syllabus:							
Literature:							
Language, knov	wledge of which	is necessary to	complete a cour	·se:			
Notes:				_			
Evaluation of so Total number of	ubjects f evaluated stude	nts: 105					
A	В	С	D	Е	FX		
98.1	98.1 1.9 0.0 0.0 0.0 0.0						
Teacher: doc. R	NDr. Ferdinánd	Filip, PhD., RND	r. Zuzana Árki,	PhD.	ı		
Date of last upo	late: 02.04.2020						
Approved by:	,						

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/ Name: Probability Theory and Basics of Statistics

PST/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours):

Per week: 1/2/0 For the study period: 13/26/0

Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 1.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

The course is finished by a written exam.

For assessment A should be obtained at least 90 points, for assessment B at least 80 points, for assessment C at least 70 points, for assessment D at least 60 points, for assessment E at least 50 points.

The assessment will count points earned by individual work (20%).

Results of education:

The successful completion of the course gives basic knowledge from probability theory and an overview of descriptive statistics methods. The student understands the basic concepts and know about the different formulas for calculating probability. Using random variables the student describes random events and calculate its numerical characteristics. Students master the basic methods of descriptive statistics to analyze the results of random experiments.

Brief syllabus:

1. Random events. Operations with random events. 2. Probability of random events. Definition of the probability. The Kolmogorovs field of probability. 3. Conditional and total probability. Bayes theorem. 4. Independence of events. Bernoulli scheme. 5. Random variable. Probability distribution, probability density function. 6. Characteristics of random variable. 7. Discrete distributions. Expected value and standard deviation. Calculations of probability. 8. Continuous distributions. Probability density function, expected value and standard deviation. Calculations of probability. 9. Laws of large numbers. Central limit theorem. 10. Introduction to descriptive statistics. Statistical methods of the analysis of random experiment. 11. Frequency analysis and graphical display of data. 12. Measures of central tendency and variability. 13. Statistical relationship between data.

Literature:

Bukor J., Árki Z., Fehér Z.: Valószínűségszámítás. 1. vyd. Komárom : Selye János Egyetem Gazdaságtudományi Kara, 2010. - 120s. - ISBN 978-80-89234-94-3. Obádovics, Gy.: Valószínűségszámítás és matematikai statisztika, SCOLAR, Budapest, 2003. 302 s. ISBN 963 9534 005. Nemetz T., Wintshe G.: Valószínűségszámítás és statisztika mindenkinek. - Szeged : Bolyai Intézet POLYGON, 1999. - 243 s. ISSN 1218-4071. Nemetz T.: Valószínűségszámítás : Speciális matematika tankönyvek. - 4., változatlan utánnyomás. - Budapest : Typotex kiadó, 2010. - 292 s. - ISBN 978 963 279 164 7. Nagy-György J., Osztényiné Krauczi É., Székely

L.: Valószínűségszámítás és statisztika példatár. - 3. vyd. - Szeged : Szegedi Egyetemi Kiadó POLYGON, 2010. - 111 s. ISSN 1417-0590.

Language, knowledge of which is necessary to complete a course: hungarian

Notes:

Evaluation of subjects

Total number of evaluated students: 124

A	В	С	D	Е	FX
9.68	13.71	25.81	21.77	25.81	3.23

Teacher: doc. RNDr. Ferdinánd Filip, PhD.

Date of last update: 02.04.2020

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/

Name: Seminar from Number Theory

STC/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 0/2/0 For the study period: 0/26/0

Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

The exam consists of a written part worth 80 points and an oral part worth 20 points. After adding up the results, the minimum and maximum scores required to earn for the individual grades are the following: minimum 91 points for A, 81-90 points for B, 71-80 points for C, 61-70 points for D and 51-60 points for E.

Results of education:

The course is designed to introduce the basic arithmetic function and show the existing relationships between them. The most important theorems related to the distribution of number theory functions are also presented as well as the most important formulas regarding the distribution of prime numbers.

Brief syllabus:

Arithmetic functionc. Multiplicative arithmetic functions. Dirichlet multiplication. Möbius inversion formula. Mean value and distribution of number theory functions. Distribution of prime numbers, divergence of the reciprocal sum of prime numbers, asymptotic density of the set of prime numbers.

Literature:

Šalát a kol.: Algebra a teoretická aritmetika 2, Bratislava, Alfa 1986

Znám: Teória čísel, Alfa, Bratislava, 1977

László, B. - Tóth, J.: Bevezetés a számelméletbe, Lilium Aurum, 1999

Erdős, P. - Surányi, J.: Vállogatott fejezetek a számelméletből, Polygon, Szeged, 1996 Freud, R. a

kol.: Számelmélet, Nemzeti Tankönyvkiadó, Budapest, 2000. ISBN 9631907848

Bege, A. a kol.: Számelméleti feladatgyujtemény, Scientia Kiadó, Kolozsvár, 2002. ISBN

0991493

Language, knowledge of which is necessary to complete a course:

hungarian, slovak

Notes:

Evaluation of subjects

Total number of evaluated students: 41

A	В	С	D	Е	FX		
24.39	17.07	12.2	21.95	24.39	0.0		
Teacher:							
Date of last update: 02.04.2020							
Approved by:							

Name of the university: J. Selye University

Name of the faculty: Faculty of Education

Code: KMI/Mdm/ Name: Number Theory

TC/15

Types, range and methods of educational activities:

Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 2 / 1 / 0 For the study period: 26 / 13 / 0

Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

The exam consists of a written part worth 80 points and an oral part worth 20 points. After adding up the results, the minimum and maximum scores required to earn for the individual grades are the following: minimum 91 points for A, 81-90 points for B, 71-80 points for C, 61-70 points for D and 51-60 points for E.

Results of education:

The student understands the Cantor series development of real numbers and is able to determine the g-adic form of rational numbers. He is able to define the continued fraction form of rational and second-degree algebraic numbers. The student gains an insight into the theory of Diophantine approximation. He knows the concepts of asymptotic and logarithmic density and the relationship between them, and is able to define the asymptotic density of some specific sets.

Brief syllabus:

Real numbers in the Cantor series, conditions of rationality and irrationality. Continued fractions. Algebraic and transcendental numbers, the transcendence of e. Diophantine approximation, Dirichlet theorem, approximality of algebraic numbers. Liouville numbers. Asymptotic and logarithmic density of sets.

Literature:

Šalát a kol.: Algebra a teoretická aritmetika 2, Bratislava, Alfa 1986

Znám: Teória čísel, Alfa, Bratislava, 1977

László, B. - Tóth, J.: Bevezetés a számelméletbe, Lilium Aurum, 1999

Erdős, P. - Surányi, J.: Válogatott fejezetek a számelméletből, Polygon, Szeged, 2004. 327s. Freud, R. a kol.: Számelmélet, Nemzeti Tankönyvkiadó, Budapest, 2000. ISBN 9631907848 Bege, A. a kol.: Számelméleti feladatgyujtemény, Scientia Kiadó, Kolozsvár, 2002. ISBN 2021-103

0991493

Language, knowledge of which is necessary to complete a course:

hungarian, slovak

Notes:

Evaluation of subjects

Total number of evaluated students: 130

A	В	С	D	Е	FX	
17.69	23.85	17.69	16.92	22.31	1.54	
Teacher: prof. László Szalay, DSc.						
Date of last update: 02.04.2020						

Name of the university: J. Selye University					
Name of the faculty: Faculty of Education					
Code: KMI/Mdm/ UMS/15	Name: Mathematical Competition Tasks Solving				
Types, range and methods of educational activities: Form of study: Lecture / Seminar / Practical Recommended extent of course (in hours): Per week: 0 / 2 / 0 For the study period: 0 / 26 / 0 Methods of study: present					
Number of credits: 3					
Recommended semester/trimester of study: 1.					
Level of study: II.					
Prerequisites:					
Conditions for passing the subject:					
Results of education:					
Brief syllabus:					
Literature:					
Language, knowledg	ge of which is necessary to o	complete a course:			
Notes:					
Evaluation of subjects Total number of evaluated students: 45					
	a	n			
100.0		0.0			
Teacher: RNDr. Alexander Maťašovský, PhD.					
Date of last update: 02.04.2020					
Approved by:					

Name of the un	niversity: J. Sely	e University				
Name of the fa	culty: Faculty of	Education				
Code: KMI/Md ŠSMgr/15	m/ Name: M	Name: Mathematics				
Form of study Recommende	: d extent of cour r the study peri	` '	ities:			
Number of cree	dits: 2			_		
Recommended	semester/trime	ster of study:		_		
Level of study:	II.					
_	KMI/Mdm/DM1 m/DM3/15,KMI	/15,KMI/Mdm/P3 /Mdm/PPX4/15	ST/15,KMI/Mdn	n/DM2/15,KMI/I	Mdm/	
Conditions for	passing the sub	ject:				
Results of educ	eation:					
Brief syllabus:	,					
Literature:						
Language, kno	wledge of which	is necessary to	complete a cour	·se:		
Notes:						
Evaluation of s Total number o	ubjects f evaluated stude	ents: 30				
A	В	С	D	Е	FX	
26.67	20.0	23.33	16.67	10.0	3.33	
Teacher:					•	
Date of last upo	date: 02.04.2020			-		
Approved by:						

Name of the university: J. Selye University							
Name of the faculty: Faculty of Education							
Code: KMI/	Name: Pe	Name: Pedagogical Practice 3					
MdmPPX3/15							
Types, range ar	nd methods of e	ducational activi	ities:				
Form of study							
	d extent of cours	,					
	r the study perio	od: 20s					
Methods of stu	udy: present						
Number of cred	dits: 4						
Recommended	semester/trimes	ster of study: 3.					
Level of study:	II.						
Prerequisites:							
Conditions for passing the subject:							
Results of educ	ation:			_			
Brief syllabus:							
Literature:							
Language, kno	wledge of which	is necessary to	complete a cour	se:			
Notes:				_			
Evaluation of s	ubjects						
Total number of evaluated students: 26							
A	В	С	D	Е	FX		
96.15	3.85	0.0	0.0	0.0	0.0		
Teacher: doc. RNDr. Ferdinánd Filip, PhD., RNDr. Zuzana Árki, PhD.							
Date of last upo	date: 02.04.2020						