INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ DI1/15	**Name:** Didactics of Informatics 1

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
 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 students are become familiar with special elements in teaching informatics subjects at elementary and secondary schools as well as with various forms and methods of teaching (problem based, project based learning and cooperative teaching). Continuous, individually and creatively works on their own preparation to the lesson (to the content), which must submit, subsequently presenting (to teach) in the frame of the exercise. During the semester, students have the opportunity to consult their sample preparation with teacher. During the semester, students are evaluated to their activity (creation of preparation) and for the performance (presentation of own preparation). Students must get at least the 50% of the total evaluation, to be allowed to pass the examination. The exam is combined and consists of practical part - presentation of the didactic software and verification of theoretical knowledge from creation of educational software. The students, to be classified, must be also successful at least 50% on the exam. Students are classified according to the average obtained in the overall assessment of the continuous preparing during the semester (50%) and according to the exam (50%). For obtaining the classification A must be obtained at least 90% share of average, at least 80% for B, for C at least 70%, at least 60% for D, for E at least 50%. Credits for subject will not be assigned for the student, who is not at least 50% successful of the individual parts.

Results of education:
After successful completion of this course students can use different teaching forms and methods, to know the structure of the lesson, and are able to apply their own preparation in the subject of informatics. They are aware of the possibilities of the computer as didactic tools in various forms and phases of education. They know control technical and legal context of the teaching and its organization.

Brief syllabus:
• Introduction to didactics of informatics,
• special elements of teaching the subjects of informatics,
• working on the computer for beginners,
• work with text (problem based learning),
• working with graphics (problem based learning),
• spreadsheets and databases (problem and project based learning),
• Internet and communication (cooperative teaching),

- supporting of the creativity in the education - constructionism and constructivism,
- evaluating the pupil performance and the classification,
- preparation of teacher of informatics to the teaching,
- structure of the lesson,
- computer as a universal didactic tool,
- technical and legal context of the teaching and its organization.

Literature:
1. Current curricula and education standards for subjects of Informatics (ISCED2, ISCED3). [online]. Available: <http://www.statpedu.sk/sk/Statny-vzdelavaci-program>
2. BORSÁNYI, K.: Informatika. Budapest : Nemzeti Tankönyvkiadó, 2000. 16 s. ISBN 0009435.
3. BRESTENSKÁ, B.: Premena školy s využitím informačných a komunikačných technológií : Využitie IKT v danom predmete : spoločná časť. 1. vyd. Košice : elfa, s.r.o. 162 s. ISBN 978-80-8086-143-8.
4. COLIN, A.J.T.: Bevezetés az operációs rendszerek tanulmányozásába. Budapest : Statisztikai Kiadó Vállalat, 1976. 139 s. ISBN 963 340 085 6.
5. KALAŠ, I.: Informatika pre stredné školy. 1. vyd. Bratislava : Slovenské pedagogické nakľadateľstvo, 2001. 112 s. ISBN 80-08-01518-7.
6. KALAŠ, I.: Premeny školy v digitálnom veku. 1. vyd. Bratislava : Slovenské pedagogické nakladateľstvo - Mladé letá, s.r.o., 2013. 256 s. ISBN 978-80-10-02409-4.
7. KOVÁCS, M.: Bevezetés a Számítástechnikába. Budapest : LSI Oktatóközpont, 2002. 368 s. ISBN 963 577 270 X.
8. NÉMET, I.: Informatika 8-10 éves gyerekek számára. Budapest : Holnap, 1994. 82 s. ISBN 9634412270.
9. NÉMETH, F.: Tehnika - informatika 10-11 éveseknek. Budapest : Műszaki Kiadó, 1995. 70 s. ISBN 963160568X.
10. NÉMETH, G.: Informatika. Budapest : Műegyetemi Kiadó, 2002. 215 s. ISBN 0108228.
11. NÉMETH, I.: Informatika - munkáltató tankönyv az 5. osztályosok számára. Budapest : Calibra, 1994. 108 s. ISBN 963 8078 20 0.
12. NÓGRÁDI, L.: PC suli XP alapokon I. kötet. 1. vyd. Győr : Nógrádi PC Suli Kft., 2004. 368 s. ISBN 963 216 688 4.
13. NÓGRÁDI, L.: PC suli XP alapokon II. kötet. 1. vyd. Győr : Nógrádi PC Suli Kft., 2005. 320 s. ISBN 963 216 689 2.
14. RYBÁR, J.: Kognitívne vedy. Bratislava : Kalligram, 2002. 360 s. ISBN 80-7149-515-8.
15. SIMON, Gy.: Számítástechnika középiskolásoknak. Debrecen : Pedellus BT., 1995. 204 s. ISBN 963 8397 16 0.
16. STOFFA, V.: Az informatika alapjai I. Komárno : Apáczai közalapítvány, 2007. 268 s. ISBN 978-80-89234-29-5.
17. STOFFOVÁ, V. - CZAKÓOVÁ, K. – VÉGH, L. XXV. DIDMATTECH 2012 : ABSTRACTS - ABSTRAKTY. 1. vyd. Brno : Librix, 2012. 102 s. ISBN 978 80 8122 045 6.
18. STOFFOVÁ, V. - MASTALERZ, E. – NOGA, H. XXIV DIDMATTECH 2011 : Problems in teachers education . 1. vyd. Krakow : Institute of Technology, 2011. 270 s. ISBN 978-83-7271-679-8.
19. STOFFOVA, V.: Az informatika alapjai II.: A számítógépes hálózatok . 1. vyd. Komárno : UJS, 2010. 140 s. ISBN 978-80-89234-65-3.
20. STOFFOVÁ, V.: Počítač univerzálny didaktický prostriedok. 1. vyd. Nitra : PF UKF, 2004. 173 s. ISBN 80 8050 765 1.
21. SZABÓ, L.: Informatika az V-X. évfolyamok számára. Celldömölk : AK -Apáczai Kiadó, 1997. 56 s. ISBN 9634642950.
22. TÓTH, T.: Informatika 8. 2. vyd. Budapest : Nemzeti Tankönyvkiadó, 2004. 112 s. ISBN 963 19 4770 X.

23. TÓTH, T.: Informatika 9. 3. vyd. Budapest : Nemzeti Tankönyvkiadó, 2004. 111 s. ISBN 963 19 5155 3.

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

Notes:
 none

Evaluation of subjects
 Total number of evaluated students: 227

A	B	C	D	E	FX
27.75	28.63	27.75	9.69	3.52	2.64

Teacher: PaedDr. Krisztina Czakóová, PhD.

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/Idm/ DI2/15	**Name:** Didactics of Informatics 2

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
 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 students are become familiar with special elements in teaching informatics subjects at elementary and secondary schools -especially focused to programming, as well as with various forms and methods of teaching (problem based, project based learning and cooperative teaching). Continuously becomes familiar with the opportunities of children´s programming languages, individually and creatively works on their own preparation to the lesson (to the content of the phases of programming), which must submit, subsequently presenting (to teach) in the frame of the exercise. During the semester students must submit for evaluation 6 preparations, from which 2 needs to be presented. Students have the opportunity to consult their preparations with teacher.
 During the semester, students are evaluated to their activity (creation of preparation) and for the 2 performance (presentation of own preparation). Students must get at least the 50% of the total evaluation, to be allowed to pass the examination. The exam is combined and consists of practical part - presentation of the didactic software and verification of theoretical knowledge from creation of educational software. The students, to be classified, must be also successful at least 50% on the exam. Students are classified according to the average obtained in the overall assessment of the continuous preparing during the semester (50%) and according to the exam (50%). For obtaining the classification A must be obtained at least 90% share of average, at least 80% for B, for C at least 70%, at least 60% for D, for E at least 50%. Credits for subject will not be assigned for the student, who is not at least 50% successful of the individual parts.

Results of education:
 After successful completion of this course students can use different teaching forms and methods, focused to teach programming at elementary and secondary school. Know the structure of the lesson, and are able to apply their own preparation to teach the programming in the subject of informatics. They are aware of the possibilities of the computer as didactic tools in various forms and phases of education. They know control technical and legal context of the teaching and its organization.

Brief syllabus:
 • Safety regulations and health protection at work with a computer,
 • the place of programming in the frame of teaching informatics,

• children's programming languages and their application in primary and secondary schools - Logo turtle graphics, Imagine and other graphical programming environment,
• teaching programming in the "classic" programming language in primary and secondary schools,
• pupils' motivation and creativity,
• care of talented pupils - their preparation for programming competitions,
• evaluation of programming skills and performance,
• work with literature and with resources from the Internet (type freeware programs),
• social, ethical and psychological issues connected with teaching,
• methods of problem-based learning and collective problem-solving - active performance of students,
• technical realization of teaching - exemplification, electronic textbooks.

Literature:
1. Current curricula and education standards for the subjets of Informatics (ISCED2, ISCED3). [online]. Available: <http://www.statpedu.sk/sk/Statny-vzdelavaci-program>
2. BÁRDOS, A. - KÖRTVÉLYESI, G.: Programozási alapfeladatok gyűjteménye. Budapest : Számalk, 1985. 210 s. ISBN 963 553 0978.
3. CSŐKE, L. - GARAMHEGYI, G.: A számítógép - programozás logikai alapjai. Algoritmusok és elemi adatszerkesztés. Budapest : Nemzeti Tankönyvkiadó, 2002. 144 s. ISBN 9631883310,
4. KALAŠ, I.: Informatika pre stredné školy. 1. vyd. Bratislava : Slovenské pedagogické nakľadateľstvo, 2001. 112 s. ISBN 80-08-01518-7.
5. KALAŠ, I.: Premeny školy v digitálnom veku. 1. vyd. Bratislava : Slovenské pedagogické nakladateľstvo - Mladé letá, s.r.o., 2013. 256 s. ISBN 978-80-10-02409-4.
6. MOLNÁR, Cs. - SÁGI, G.: Programozás : Informatikai füzetek. Budapest : BBS-E, 2003. 298 s. ISBN 9630034468.
7. MOLNÁR, Cs.: Programozás Turbo Pascal nyelven. Budapest : BBS-INFO, 2001. 234 s. ISBN 963 03 7152 9.
8. NÉMET, I.: Informatika 8-10 éves gyerekek számára. Budapest : Holnap, 1994. 82 s. ISBN 9634412270.
9. NÉMETH, F.: Tehnika - informatika 10-11 éveseknek. Budapest : Műszaki Kiadó, 1995. 70 s. ISBN 963160568X.
10. NÉMETH, G.: Informatika. Budapest : Műegyetemi Kiadó, 2002. 215 s. ISBN 0108228.
11. NÉMETH, I.: Informatika - munkáltató tankönyv az 5. osztályosok számára. Budapest : Calibra, 1994. 108 s. ISBN 963 8078 20 0.
12. PENTELÉNYI, P.: Az algoritmikus szemléletmód kialakítása és fejlesztése a tanítási - tanulási folyamatban. Budapest : Ligatura, 1999. 128 s. ISBN 963 85138 8 8.
13. PONGOR, Gy.: Szabványos PASCAL Programozás és algoritmusok. Budapest : Muszaki könyvkiadó, 2002. 424 s. ISBN 9631625737.
14. RYBÁR, J.: Kognitívne vedy. Bratislava : Kalligram, 2002. 360 s. ISBN 80-7149-515-8.
15. SIMON, Gy.: Számítástechnika középiskolásoknak. Debrecen : Pedellus BT., 1995. 204 s. ISBN 963 8397 16 0.
16. STOFFA, V.: Algoritmizáció és programozás I. Komárno : Selye János Egyetem, 2005. 174 s. ISBN 80-969251-7-2.
17. STOFFOVÁ, V. - CZAKÓOVÁ, K. – VÉGH, L. XXV. DIDMATTECH 2012 : ABSTRACTS - ABSTRAKTY. 1. vyd. Brno : Librix, 2012. 102 s. ISBN 978 80 8122 045 6.
18. STOFFOVÁ, V. - MASTALERZ, E. – NOGA, H. XXIV DIDMATTECH 2011 : Problems in teachers education . 1. vyd. Krakow : Institute of Technology, 2011. 270 s. ISBN 978-83-7271-679-8.
19. SZABÓ, L.: Informatika az V-X. évfolyamok számára. Celldömölk : AK -Apáczai Kiadó, 1997. 56 s. ISBN 9634642950.

20. TÓTH, P.: Gondolkodásfejlesztés az informatika oktatásban. Budapest : Ligatura, 2004. 60 s. ISBN 9638611324xy.

21. TÓTH, T.: Informatika 8. 2. vyd. Budapest : Nemzeti Tankönyvkiadó, 2004. 112 s. ISBN 963 19 4770 X.

22. TÓTH, T.: Informatika 9. 3. vyd. Budapest : Nemzeti Tankönyvkiadó, 2004. 111 s. ISBN 963 19 5155 3.

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

Notes:
none

Evaluation of subjects
Total number of evaluated students: 192

A	B	C	D	E	FX
35.42	25.0	23.96	7.81	5.73	2.08

Teacher: PaedDr. Krisztina Czakóová, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ DS/15	**Name:** Master Thesis Seminars

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:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 106

A	B	C	D	E	FX
77.36	10.38	7.55	1.89	2.83	0.0

Teacher: Dr. habil. András Molnár, PhD., Dr. habil. Sándor Szénási, PhD., PaedDr. Krisztina Czakóová, PhD., Ing. Ondrej Takáč, PhD., RNDr. Štefan Gubo, PhD., prof. Dr. Annamária Várkonyiné Kóczy, DSc., PaedDr. Ladislav Végh, PhD., prof. József Zoltán Kató, DSc., Dr. habil. Dr. Gábor Kiss, PhD., prof. RNDr. Tibor Kmeť, CSc., Dániel Zoltán Stojcsics, PhD., Dr. habil. Attila Elemér Kiss, CSc.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	
Name of the faculty: Faculty of Education	

Code: KMI/Idm/ MIT/15	**Name:** Materials in ICT

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 1 / 0 **For the study period:** 13 / 13 / 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, knowledge of which is necessary to complete a course:

Notes:

Evaluation of subjects
 Total number of evaluated students: 156

A	B	C	D	E	FX
45.51	23.08	17.95	7.69	5.13	0.64

Teacher: RNDr. József Udvaros, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ MS1/15	**Name:** Modeling and Simulation 1

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 2 / 0 / 2 **For the study period:** 26 / 0 / 26
 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 students except of analytical solutions of identification systems problems, making their mathematical models and computer implementation models create their own applications - computer simulation model of a particular system.
 Students are assessed according to the average percentage obtained on the basis of their continuos training assessment during the semester, their semester project and the exams. For assessment A it should be obtained at least 90 percent, for assessment B at least 80 percent, for assessment C at least 70 percent, for assessment D at least 60 percent, for assessment E at least 50 percent.

Results of education:
 After successful completion of the course the student is familiar with the methods of modeling and simulation, can do mathematical models, and he has has a theoretical knowledge and skills to implement them through appropriate programming environment. He can cope with the simulation of different dynamic effects in order to acquire new knowledge.

Brief syllabus:
 Course contents:
 Introduction to modeling and simulation systems, basic terminology, classification systems and their essential characteristics ,
 Discrete systems:
 Markov chain and its characteristics;
 queuing systems and their classification;
 Kolmogorov differential equations and analytical solutions of queuing systems ;
 Description and analytical solution for various types of queuing systems;
 Network queuing systems and analytical solutions;
 Methods for generating random numbers;
 Monte Carlo method and its applications;
 Compartmental models in discrete systems;
 Languages for modeling and siulation of discrete systems (SPML);
 Computer modelling and simulation of discrete systems;
 Simulation experiments, their planning and implementation, simulation protocol.
 Continuous systems:

A description of continuous systems, mathematical models of continuous systems and their creation;

dentification of systems;

Numerical methods for solving linear systems;

Continuous compartmental models;

Languages for continuous systems (PSI/I);

Computer modeling and simulation in continuous systems;

Simulation experiments, their planning and implementation;

Interpretation of the results of the simulation experiment.

Literature:

1. ŠAFAŘÍK, J. - ŠTOFOVÁ, V. - CVIK, P.: Modelovanie a simulácia. EF SVŠT, Bratislava 1984.

2. RÁBOVÁ, Z. a kol.: Modelování a simulace. Nakladatelství VUT, Brno 1992.

3. NEUSCHL, Š. a kol.: Modelovanie a simulácia. Alfa - SNTL. Praha 1988.

4. KUNEŠ, J. - VAVROCH, O. - FRANTA. V.: Základy modelování. SNTL, Praha, 1989.

5. ZÍTEK, P.: Simulace dynamických systémů. SNTL, Praha 1990.

6. SMÍTALOVÁ, K.– ŠUJAN, Š.: Dynamické modely biologických spoločenstiev. VEDA, Bratislava, 1989

Časopisy: Simulation Modelling Practice and Theory, Modelling and Simulation in Engineering

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

Hungarian language, Slovak language, English language

Notes:

Evaluation of subjects

Total number of evaluated students: 179

A	B	C	D	E	FX
18.99	22.35	25.7	12.29	15.08	5.59

Teacher: prof. RNDr. Tibor Kmeť, CSc.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	
Name of the faculty: Faculty of Education	

Code: KMI/Idm/ MS2/15	**Name:** Modeling and Simulation 2

Types, range and methods of educational activities:
  Form of study: Lecture / Seminar / Practical
  Recommended extent of course (in hours):
  Per week: 0 / 0 / 2 **For the study period:** 0 / 0 / 26
  Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 84

A	B	C	D	E	FX
52.38	19.05	17.86	3.57	3.57	3.57

Teacher: prof. RNDr. Tibor Kmeť, CSc., Mgr. Dávid Paksi

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KINF/Idm/ MTV/20	**Name:** Modern technologies in education

Types, range and methods of educational activities:
  Form of study: Lecture / Seminar / Practical
  Recommended extent of course (in hours):
  Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
  Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 6

A	B	C	D	E	FX
83.33	0.0	16.67	0.0	0.0	0.0

Teacher: PaedDr. Krisztina Czakóová, PhD., prof. RNDr. Tibor Kmeť, CSc.

Date of last update: 08.09.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ NM/15	**Name:** Numerical Mathematics

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The course is finished by a written exam where it is possible to obtain 100 points. 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. Credits will not be granted to students who obtain less than 50 points.

Results of education:
 At the end of the course, students will obtain an overview of the basic numerical methods and will be able to use them in solving programming problems.

Brief syllabus:
 Introduction to the Numerical Mathematics.
 Numerical solution of linear equation systems – backward substitution, Gaussian elimination, Gaussian elimination with scaled partial pivoting, Jacobi method, Gauss-Seidel method, Gauss-Jordan method, LU-factorization.
 Eigenvalues – computing the largest eigenvalue.
 Numerical solution of nonlinear equations – root separation, interval splitting, bisection method, Newton's method, simple iteration method, solution of nonlinear equation systems.
 Interpolation – polynomial approximation of functions, linear interpolation, Lagrange interpolation polynomial, Newton interpolation polynomial, Aitken interpolation, method of least squares.
 Numerical differentiation.
 Numerical integration – quadrature rules (rectangle rule, trapezoidal rule, Simpson's rule).
 Numerical solution of differential equations – Euler method, Predictor–corrector method, Runge-Kutta method.

Literature:
 BÉKÉSOVÁ, S.: Základy numerickej matematiky a programovanie. Bratislava : Alfa, 1984. 211 s.
 KMEŤ, T. – VOZÁR, M. – KMEŤOVÁ, M.: MATLAB a vizualizácia numerických a optimalizačných metód. Nitra : FPV UKF, 2012. 191 s. ISBN 978-80-558-0114-8.
 NEKVIDA, M.: Úvod do numerické matematiky. Praha : SNTL, 1976. 288 s.
 GISBERT, S. – TAKÓ, G.: Numerikus módszerek. Budapest : Typotex, 2002. 442 s. ISBN 978-963-9326-20-8.

SOMOGYI, I. – SZILÁRD, A.: Numerikus analízis. Cluj-Napoca : Presa Universitara Clujena, 2009. 264 s. ISBN 978-973-610-702-3.
STIEFEL, E.: Bevezetés a numerikus matematikába. Budapest : Műszaki Könyvkiadó, 1973. 299 s.

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

Notes:

Evaluation of subjects
Total number of evaluated students: 188

A	B	C	D	E	FX
29.79	16.49	26.06	10.64	14.89	2.13

Teacher: prof. RNDr. Tibor Kmeť, CSc.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KINF/Idm/ NMO/20	**Name:** Numerical mathematics and optimization

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 2 / 0 / 2 **For the study period:** 26 / 0 / 26
 Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 84

A	B	C	D	E	FX
28.57	22.62	25.0	4.76	15.48	3.57

Teacher: prof. RNDr. Tibor Kmeť, CSc.

Date of last update: 06.10.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ ODP/15	**Name:** Master Thesis and its defence

Types, range and methods of educational activities:
 Form of study:
 Recommended extent of course (in hours):
 Per week: For the study period:
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study:

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 20

A	B	C	D	E	FX
70.0	15.0	0.0	5.0	10.0	0.0

Teacher:

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ OPT/15	**Name:** Optimization

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
 Methods of study: present

Number of credits: 5

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The course is finished by a written exam where it is possible to obtain 100 points. 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. Credits will not be granted to students who obtain less than 50 points.

Results of education:
 At the end of the course, students will obtain an overview of the basic optimization methods, their algorithmization and will be able to use them in solving programming problems.

Brief syllabus:
 Classification of optimization tasks.
 Linear programming, linear optimization tasks.
 Optimization and Game Theory.
 Simplex method.
 Parametric tasks.
 Branch and Bound method.
 Dynamic programming and optimization.
 Nonlinear programming.
 One-parameter optimization tasks – golden section search method, Fibonacci search method.
 Multi-parameter optimization tasks – method of least squares (discrete and continuous), gradient method, Cauchy method of steepest descent.
 Constrained optimization tasks – method of Lagrange multipliers, penalty method.

Literature:
 KMEŤ, T. – VOZÁR, M. – KMEŤOVÁ, M.: MATLAB a vizualizácia numerických a optimalizačných metód. Nitra : FPV UKF, 2012. 191 s. ISBN 978-80-558-0114-8. KOŘENÁŘ, V. – LAGOVÁ, M. a kol.: Optimalizační metody. Praha : Vysoká škola ekonomická, 2003. 187 s. ISBN 978-80 245-0609-2. BAJALINOV, E. – IMREH, B.: Operációkutatás. Szeged : Polygon, 2001. 302 s. ISSN 0000-2467. DANYI, A. – VARRÓ, D.: Operációkutatás: Lineáris programozás. Pécs : PTE, 2003. 306 s. ISBN 978-963-6413-77-0.

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

Notes:					
Evaluation of subjects Total number of evaluated students: 199					
A	B	C	D	E	FX
37.69	24.12	18.59	6.03	13.57	0.0
Teacher: prof. RNDr. Tibor Kmeť, CSc.					
Date of last update: 02.04.2020					
Approved by:					

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education

Code: KMI/Idm/ PGR/15	**Name:** Computer Graphics 2

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 1 / 0 / 2 **For the study period:** 13 / 0 / 26
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
The course is finished by an exam. Students are assessed according to the average percentage obtained on the exams. For assessment A should be obtained at least 90 percent, for assessment B at least 80 percent, for assessment C at least 70 percent, for assessment D at least 60 percent, for assessment E at least 50 percent. Credits will not be granted to students who obtain less than 50 percent.

Results of education:
After successful completion of the course the student gain insight into the world of digital image processing and computer graphics. He masters the technical terminology, algorithms, principles and procedures used in computer graphics. He is familiar with the work of raster and vector graphics, work with graphic data and formats, hardware components and modern methods.

Brief syllabus:
Introduction to image processing and computer graphics.
Characterization of raster image and their displayig.
Color models and the human visual system.
Raster image formats.
Raster image compression method. Image processing- highlighting , bounding of noise and so on.
Stereograms, optical illusion.
Characterization of vector images.
Curves and surfaces.
Geometric transformations.
Visibility of objects.
Lighting and shading.
Fractals in computer graphics.

Literature:
BUDAI, A.: A számítógépes grafika. Budapest, 2003, 390 s. LSI Oktatóközpont, ISBN 9635772432.
SOBOTA, B. - Milián, J.: Grafické formáty. České Budějovice, 1996, 157 s. Kopp, ISBN 80-85828-58-8.
SZIRMAY, L.: Számítógépes grafika. Budapest 2003, 334 s. ComputerBooks, ISBN 963 618 208 6.

BERKE, J. - HEGEDŰS, Cs. - KELEMEN, D.: Digitálisképfeldolgozásésalkalmazásai. Budapest, 1996, 215 s. Pictron, ISBN 963 00 5744 1.
ŽÁRA, J. a kol: Moderní počítačová grafika, Brno 2010, 608 s., Computer Press a.s., ISBN 80-251-0454-0.
HIDEGKUTI, G.: Vinnay, P. Digitálisképalkotás. Budapest, 2001, 196 s., ViviCom Kiadói és Kommunikációs Kft., ISBN 9789630088533.
FÜZI, J.: Grafikai alkalmazások Delphi nyelven. Budapest, 2000, 322 s., ComputerBooks, ISBN 963 618 236 1.

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

Notes:

Evaluation of subjects
Total number of evaluated students: 206

A	B	C	D	E	FX
24.27	21.84	16.5	16.02	20.87	0.49

Teacher: Ing. Ondrej Takáč, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ PPX2/15	**Name:** Pedagogical Practice 2

Types, range and methods of educational activities:
 Form of study: Seminar
 Recommended extent of course (in hours):
 Per week: For the study period: 20s
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The student shall transmit documentation on teaching practice: completed observation sheets, protocol of teaching practice, lesson plans and assessment of own performer teaching practice.

Results of education:
 Within the teaching practice students observe and analyze educational process. They learn to apply the theoretical knowledge acquired during studies of general-education subjects, general and subject didactics. They gradually acquire teaching skills to conduct teaching profession.

Brief syllabus:
 - 5 hours to listen: passive participation in the hour of the teacher trainer, during which the student monitoring the progress of the lesson, resp. the educational process and makes notes of the aspects of the lesson in monitoring sheets;
 - 5 hours of preparation: the student is preparing for the teaching activity, resp. for the management of lesson, according to the instructions and guidances of teacher trainer;
 - 5 hours of active teaching activity: the student performs as a teacher in the classroom selected by teachers trainer and leads the lesson;
 - 5 hours of analysis and evaluation: the teacher trainer and student jointly make analysis the activity of the student, from the methodological and didactical point of view.

Literature:
 The current curriculum and educational standards.
 Pedagogical school programs for primary /secondary schools.
 Overview of current foreign pedagogical documents.

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

Notes:
 The student mandatory takes up the performer teaching practice (PPX2 respectively PPX3) from the one of their combination (subject specialization) in the 2. semester and the second one in the 3. semester.
 The performer teaching practice - active individual teaching of students (trainees) under the guidance of teacher trainers based on thought out written preparation. It has two forms: the continuous performer teaching practice and the related performer teaching practice.

The student absolves the continuous performer teaching practice (PPX2) from the one of their subject specialization in the 2. semester of master study (in the range of 20 hours per semester) and the continuous performer teaching practice from second one subject specialization (PPX3) in the 3. semester of master study (in the range of 20 hours per semester).

The student absolves the related performer teaching practice (PPX4) from each of subject specialization in the 4. semester of master study in the range of 40 hours per subject specialization, of which 20 hours in primary school and 20 hours in secondary school (the first subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school; the second subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school).

Evaluation of subjects
Total number of evaluated students: 74

A	B	C	D	E	FX
67.57	18.92	2.7	1.35	6.76	2.7

Teacher: PaedDr. Krisztina Czakóová, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ PPX3/15	**Name:** Pedagogical Practice 3

Types, range and methods of educational activities:
 Form of study: Seminar
 Recommended extent of course (in hours):
 Per week: For the study period: 20s
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The student shall transmit documentation on teaching practice: completed observation sheets, protocol of teaching practice, lesson plans and assessment of own performer teaching practice.

Results of education:
 Within the teaching practice students observe and analyze educational process. They learn to apply the theoretical knowledge acquired during studies of general-education subjects, general and subject didactics. They gradually acquire teaching skills to conduct teaching profession.

Brief syllabus:
- 5 hours to listen: passive participation in the hour of the teacher trainer, during which the student monitoring the progress of the lesson, resp. the educational process and makes notes of the aspects of the lesson in monitoring sheets;
- 5 hours of preparation: the student is preparing for the teaching activity, resp. for the management of lesson, according to the instructions and guidance of teachers trainer;
- 5 hours of active teaching activity: the student performs as a teacher in the classroom selected by teacher trainer and leads the lesson;
- 5 hours of analysis and evaluation: the teacher trainer and student jointly make analysis the activity of the student, from the methodological and didactical point of view.

Literature:
 The current curriculum and educational standards.
 Pedagogical school programs for primary /secondary schools.
 Overview of current foreign pedagogical documents.

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

Notes:
 The student mandatory takes up the performer teaching practice (PPX2 respectively PPX3) from the one of their combination (subject specialization) in the 2. semester and the second one in the 3. semester.
 The performer teaching practice - active individual teaching of students (trainees) under the guidance of teacher trainers based on thought out written preparation. It has two forms: the continuous performer teaching practice and the related performer teaching practice.

The student absolves the continuous performer teaching practice (PPX2) from the one of their subject specialization in the 2. semester of master study (in the range of 20 hours per semester) and the continuous performer teaching practice from second one subject specialization (PPX3) in the 3. semester of master study (in the range of 20 hours per semester).

The student absolves the related performer teaching practice (PPX4) from each of subject specialization in the 4. semester of master study in the range of 40 hours per subject specialization, of which 20 hours in primary school and 20 hours in secondary school (the first subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school; the second subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school).

Evaluation of subjects

Total number of evaluated students: 96

A	B	C	D	E	FX
65.63	19.79	9.38	3.13	2.08	0.0

Teacher: PaedDr. Krisztina Czakóová, PhD.

Date of last update: 02.04.2020

Approved by:

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INFORMATION SHEET

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Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ PPX4/15	**Name:** Pedagogical Practice 4

Types, range and methods of educational activities:
 Form of study: Seminar
 Recommended extent of course (in hours):
 Per week: For the study period: 40s
 Methods of study: present

Number of credits: 4

Recommended semester/trimester of study: 4.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The student shall transmit documentation on teaching practice: completed observation sheets, protocol of teaching practice, lesson plans and assessment of own performer teaching practice.

Results of education:
 The student will be able to handle the monitoring, evaluation analyzes of teaching during teaching practice, respectively the methodology of teaching in elementary and secondary schools at the professional level, within the terms of primary and secondary schools in accordance with pedagogical-didactic knowledge and will be able to individually leads the lesson.

Brief syllabus:
Didactic teaching competence in direct contact with pupils / students in the environment of elementary resp. secondary school. Monitoring and analyzing of educational activities. Professional mastering methodology (based on individual concepts) as it current trends of didactics in English language projects for primary and secondary schools. Application of pedagogical approaches based on the personality of pupils / students. Expected are the elements of creativity, independence, individuality and alternatives in the participants used methodology.

Literature:
The current curriculum and educational standards.
Pedagogical school programs for primary /secondary schools.
Overview of current foreign pedagogical documents.

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

Notes:
The student absolves the related performer teaching practice in the range of 40 hours per subject specialization, of which 20 hours in primary school and 20 hours in secondary school (the first subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school; the second subject specialization: 40 hours = 20 hours of basic school + 20 hours secondary school).

Evaluation of subjects
Total number of evaluated students: 192

A	B	C	D	E	FX
68.23	18.75	5.21	3.13	3.65	1.04

Teacher: PaedDr. Krisztina Czakóová, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ TAP/15	**Name:** Spreadsheet application 2

Types, range and methods of educational activities:
 Form of study: Lecture / Seminar / Practical
 Recommended extent of course (in hours):
 Per week: 0 / 0 / 2 **For the study period:** 0 / 0 / 26
 Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 1.

Level of study: II.

Prerequisites:

Conditions for passing the subject:
 The course is finished by a written test where it is possible to obtain 100 points. 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. Credits will not be granted to students who obtain less than 50 points.

Results of education:
 At the end of the course, students will be able to create and edit pivot tables, work with matrices, find extrema of functions, solve equations, a system of equations, linear optimization tasks, regression tasks and create simple macros.

Brief syllabus:
 Creating and editing pivot tables.
 Sorting, filtering and grouping data in a pivot table.
 Operations with matrices.
 Finding extrema of functions.
 Solution of linear and nonlinear equations.
 Solution of a system of linear and nonlinear equations.
 Solution of linear optimization tasks – production tasks.
 Solution of linear optimization tasks – transportation tasks.
 Solution of linear regression tasks.
 Solution of nonlinear regression tasks.
 Creating simple macros.

Literature:
 PECINOVSKÝ, J. Excel 2007 v příkladech. Praha : Grada, 2009. 166 s. ISBN 978-80-247-3138-4. BÁRTFAI, B.: Táblázatkezelési gyakorlatok. Budapest : BBS-INFO, 2003. 176 s. ISBN 978-963-863-920-2. LÉVAYNÉ LAKNER, M.: Excel táblázatkezelő a gyakorlatban. Budapest : ComputerBooks, 2002. 150 s. ISBN 978-963-618-228-0.
 LÉVAYNÉ LAKNER, M.: Excel 2003 táblázatkezelés és programozás a gyakorlatban. Budapest : ComputerBooks, 2007. 240 s. ISBN 978-963-618-344-9.

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 38

A	B	C	D	E	FX
73.68	15.79	7.89	0.0	2.63	0.0

Teacher: Dr. habil. Sándor Szénási, PhD., PaedDr. Márk Csóka

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/Idm/ TWS/15	**Name:** Website Development

Types, range and methods of educational activities:
  Form of study: Lecture / Seminar / Practical
  Recommended extent of course (in hours):
  Per week: 0 / 0 / 2 **For the study period:** 0 / 0 / 26
  Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 3.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 169

A	B	C	D	E	FX
52.07	28.99	11.83	4.14	2.96	0.0

Teacher: RNDr. József Udvaros, PhD., PaedDr. Márk Csóka

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/Idm/ ŠSMgr/15	**Name:** Informatics - state exam subject

Types, range and methods of educational activities:
 Form of study:
 Recommended extent of course (in hours):
 Per week: For the study period:
 Methods of study: present

Number of credits: 2

Recommended semester/trimester of study:

Level of study: II.

Prerequisites: KMI/Idm/DI1/15,KMI/Idm/MS1/15,KMI/Idm/DI2/15,KMI/Idm/PGR/15,KINF/ Idm/NMO/20,(KINF/Idm/MTV/20 and leboKMI/Idm/OPT/15),KMI/Idm/PPX4/15

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 37

A	B	C	D	E	FX
35.14	32.43	10.81	10.81	8.11	2.7

Teacher:

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education	

Code: KMI/KMI/ INS/13	**Name:** Inteligent Systems

Types, range and methods of educational activities:
  Form of study: Lecture
  Recommended extent of course (in hours):
  Per week: 2 **For the study period:** 26
  Methods of study: present

Number of credits: 3

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects
 Total number of evaluated students: 241

A	B	C	D	E	FX
27.8	24.07	20.33	15.35	9.54	2.9

Teacher: Dr. habil. András Molnár, PhD.

Date of last update: 02.04.2020

Approved by:

INFORMATION SHEET

Name of the university: J. Selye University	

Name of the faculty: Faculty of Education

Code: KIN/ROB/11	**Name:** Robotics

Types, range and methods of educational activities: **Form of study:** Practical **Recommended extent of course (in hours):** **Per week:** 2 **For the study period:** 26 **Methods of study:** present

Number of credits: 2

Recommended semester/trimester of study: 2.

Level of study: II.

Prerequisites:

Conditions for passing the subject:

Results of education:

Brief syllabus:

Literature:

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

Notes:

Evaluation of subjects Total number of evaluated students: 66

A	B	C	D	E	FX
92.42	0.0	4.55	0.0	0.0	3.03

Teacher: Ing. Ondrej Takáč, PhD.

Date of last update: 02.04.2020

Approved by: