Course descriptions

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COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/3-MXX-101/15	Course of English for PhD Studies (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning, distance learning

Number of credits: 5

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 218

A	ABS	B	C	D	E	FX	NEABS
38,53	57,34	0,46	0,0	0,0	1,83	0,0	1,83

Lecturers: PhDr. Alena Zemanová, Mgr. Simona Dobiašová, PhD.

Last change: 13.01.2025

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KJP/3-MXX-102/15	Course of English for PhD Studies (1)

Educational activities:
Type of activities: practicals
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning, distance learning

Number of credits: 5

Recommended semester:

Educational level: III.

Prerequisites: FMFI.KJP/3-MXX-101/15 - Course of English for PhD Studies (1)

Course requirements:

Learning outcomes:

Class syllabus:

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 210

A	ABS	B	C	D	E	FX	NEABS
41,9	52,38	0,0	0,0	0,0	0,0	0,0	5,71

Lecturers: PhDr. Alena Zemanová, Mgr. Simona Dobiašová, PhD.

Last change: 13.01.2025

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-601/15	Department Seminar

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 3

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students will actively participate in research activities in their departments.

Class syllabus:
Active participation in a research seminar in the area of the thesis, usually including a presentation on the seminar. The grade is assigned by the seminar chair. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 191

ABS	NEABS
100,0	0,0

Lecturers: prof. RNDr. Roman Ďurikovič, PhD., prof. Ing. Igor Farkaš, Dr., prof. RNDr. Rastislav Kráľovič, PhD., doc. RNDr. Martin Stanek, PhD., prof. RNDr. Martin Škoviera, PhD., doc. Mgr. Tomáš Vinař, PhD.

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

STATE EXAM DESCRIPTION

Academic year: 2025/2026	
University: Comenius University Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/3-INF-950/15	**Course title:** Dissertation Examination
Number of credits: 20	
Educational level: III.	
Learning outcomes: The students demonstrate their knowledge of the area of their theses and their ability to answer questions from a wide range of topics related to their study plans. They also receive feedback on the submitted dissertation project.	
Class syllabus: State exam syllabus: Students submit written part of the exam containing the survey of the state-of-the-art in the field of the dissertation thesis, and a project of the thesis. The exam consists of question from the committee, and discussion.	
State exam syllabus:	
Languages necessary to complete the course: Slovak, English	
Last change: 10.03.2022	
Approved by: prof. RNDr. Rastislav Kráľovič, PhD.	

STATE EXAM DESCRIPTION

Academic year: 2025/2026	
University: Comenius University Bratislava	
Faculty: Faculty of Mathematics, Physics and Informatics	
Course ID: FMFI.KI/3-INF-990/15	**Course title:** Dissertation Thesis Defense
Number of credits: 30	
Educational level: III.	
Learning outcomes: PhD thesis defense concludes the doctoral studies.	
Class syllabus: The defense consists of a presentation in which the student summarizes the results of his or her work, a discussion of the comments for the reviews and a general discussion.	
State exam syllabus:	
Languages necessary to complete the course: Slovak, English	
Last change: 10.03.2022	
Approved by: prof. RNDr. Rastislav Kráľovič, PhD.	

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-805/15	Guidance of a Final Thesis or of a Project for the Students´ Conference

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 5

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Grade is assigned by the supervisor based on the continuous participation of the student in mentoring of a students of lower educational level.

Learning outcomes:
Students acquire practical experience in overseeing the preparation bachelors' theses, and Students' Conference contributions.

Class syllabus:
Student, under the guidance of his/her supervisor, proposes a research topic, and formulates the goals. Then on regular meetings with the bachelors' students, the student monitors their progress, and possibly alters the direction of the research, evaluates partial deliverables, points out to the errors and possible weak points, gives advice with the revisions of the final text, and reports all developments to the supervisor.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 52

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-023/15	Literature Monitoring and Processing

Educational activities:
Type of activities: independent work
Number of hours:
per week: 10 **per level/semester:** 130
Form of the course: on-site learning

Number of credits: 10

Recommended semester: 1., 2..

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
The student actively monitors current development in the research area corresponding to his/her thesis, can actively comprehend and process results.

Class syllabus:
The content usually consists of a set of scientific articles of at least 100 pages of text that represent the most important current results in the field. In their selection, the student actively cooperates with supervisor. The student usually processes these results in the form of a report with his own take at the essential parts and their importance. The form and scope of the examination are determined by the supervisor in a way that makes sure that the student documented an active understanding of the processed results. The course can be completed several times; after the end of the study part it is possible to enroll the subject as an elective.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 41

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-804/22	Organisation of Science Events

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 3

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Student gains experience in organizing research events.

Class syllabus:
The content of the course is work in the organizing committee of a conference, assistance in organizing a summer school, etc. The course is assessed by the advisor. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 7

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 09.02.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-602/15	PhD Students´ Mobility

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 10

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
The student will take part in a research or study stay at a chosen research institution or university. He will gain experience from research work at another institution.

Class syllabus:
The student completes research and / or study activities at the host institution. It usually involves attending seminars, or completing courses for doctoral students. The credit value can be adjusted according to the specific activity that the student performed at guest institution. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 12

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-806/22	Preparation of Grant Proposals

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 3

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
The course is assessed by the advisor who considers the materials prepared by the doctoral student.
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
The student gains experience with writing a grant application.

Class syllabus:
The goal is for the student to individually study a particular topic, formulate goals, and to submit an application for a doctoral grant (e.g. with the university grant scheme) or to participate in writing a grant application with a research group.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 8

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 09.02.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KAFZM/3-FEM-111/22	Professional Oral Communication in English

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning, distance learning

Number of credits: 5

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Regular and active presence at the seminars, student's professional presentations in various formats. The course will be classified provided that the PhD student proves the fulfilment of obligations at the level of at least 51 %. The conditions for successful completion of the course are in accordance with the Study Regulations of the Faculty of Mathematics, Physics and Informatics.

Learning outcomes:
The aim of the course is to help the student improve his/her communication and presentation skills and stimulate discussion in a simulated scientific conference/symposium setting.

Class syllabus:
The students will be trained to deliver various formats of professional communication tools: Elevator talk (1 min). Brief poster talk (3-5 min overview of the student's research topic and key achievements), flash (3 min) and full (15-45 min) oral presentation. Technique and delivery of a good (scientific) presentation. Asking questions and adding comments, addressing peers' questions and comments. The students' topics for presentation: their current research activities or other related topics to the student's field of study. By the end of the course the student will be able to present and discuss their topic effectively in English with using a variety of tools and tips.

Recommended literature:
Armer, T.: Cambridge English for Scientists

Languages necessary to complete the course:
English

Notes:
Knowledge of English minimum at B1 level.

Past grade distribution
Total number of evaluated students: 23

ABS	NEABS
100,0	0,0

Lecturers: prof. RNDr. Zdenko Machala, DrSc.
Last change: 14.04.2022
Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-401/15	Research Activity I

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 6

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:
Scale of assessment (preliminary/final): 100/0

Learning outcomes:
Students achieve their own scientific results.

Class syllabus:
The student works under the guidance of a supervisor on the topic of the dissertation. The evaluation of the subject is given by the supervisor, who ensures that the student documents the work corresponding to the number of credits awarded. This usually involves publishing technical reports, preprints, publishing / submitting papers to conferences and journals, active participation in conferences, etc. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 39

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 11.02.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-402/15	Research Activity II

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 10

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
Students achieve their own scientific results.

Class syllabus:
The student works under the guidance of a supervisor on the topic of the dissertation. The evaluation of the subject is given by the supervisor, who ensures that the student documents the work corresponding to the number of credits awarded. This usually involves publishing technical reports, preprints, publishing / submitting papers to conferences and journals, active participation in conferences, etc. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 63

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-403/15	Research Activity III

Educational activities:
Type of activities:
Number of hours:
per week: **per level/semester:**
Form of the course: on-site learning

Number of credits: 20

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
Students achieve their own scientific results.

Class syllabus:
The student works under the guidance of a supervisor on the topic of the dissertation. The evaluation of the subject is given by the supervisor, who ensures that the student documents the work corresponding to the number of credits awarded. This usually involves publishing technical reports, preprints, publishing / submitting papers to conferences and journals, active participation in conferences, etc. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 59

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-027/15	Specialisation Area

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 52
Form of the course: on-site learning

Number of credits: 14

Recommended semester: 1.

Educational level: III.

Prerequisites:

Course requirements:
Final exam
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
The student will gain deep knowledge in a field closely related to the topic of the dissertation.

Class syllabus:
The specific content of the course may vary in individual years according to the composition of students. The content usually consists of several monographs in the range of at least 500 pages of text (at the level of a scientific monograph or textbook intended for postgraduate study) and a set of scientific articles, the study of which will provide insight into the field of specialization the depth needed for active research and also allows to understand the context of the area.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 39

ABS	NEABS
100,0	0,0

Lecturers: prof. RNDr. Roman Ďurikovič, PhD., prof. Ing. Igor Farkaš, Dr.

Last change: 11.02.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-120/15	Study of Literature

Educational activities:
Type of activities: independent work
Number of hours:
per week: 5 **per level/semester:** 65
Form of the course: on-site learning

Number of credits: 4

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
The student is familiar with the results, and actively masters the techniques from current scientific papers from the area of his/her specialization.

Class syllabus:
The content usually consists of a set of scientific articles in the range of 50-150 pages of text. Student individually or with the help of the supervisor searches for current results in the given area and studies them. Form and scope of examinations are determined by the supervisor so that the student documents an active understanding of the processed results. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 131

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-803/15	Teaching Activities

Educational activities:
Type of activities: other
Number of hours:
per week: 4 **per level/semester:** 52
Form of the course: on-site learning

Number of credits: 6

Recommended semester:

Educational level: III.

Prerequisites:

Course requirements:

Learning outcomes:
The student gains experience with teaching activities like conducting problem sessions, consultations, evaluating and grading of projects etc.

Class syllabus:
The content of the course is usually the conduct of problem sessions, consultations and evaluating of students' work during semester. The grade is assigned by the head of the department where the teaching takes place. The course can be completed several times.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 183

ABS	NEABS
100,0	0,0

Lecturers:

Last change: 10.03.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-001/15	Theoretical Foundations of Informatics

Educational activities:
Type of activities: seminar
Number of hours:
per week: 2 **per level/semester:** 26
Form of the course: on-site learning

Number of credits: 8

Recommended semester: 1.

Educational level: III.

Prerequisites:

Antirequisites: FMFI.KI/3-INF-001/00

Course requirements:
Exam: written and/or oral
Scale of assessment (preliminary/final): 0/100

Learning outcomes:
The student acquires deep knowledge in the foundations of computer science.

Class syllabus:
The specific content of the course may vary in individual years according to the specific needs of the students. It usually focuses on one of the areas: computational complexity and algorithms, formal models calculations (including distributed, paper and concurrent), programming theory, modeling and simulation, logic, algebra and geometry, discrete mathematics and graph theory, probability and statistics.

Recommended literature:

Languages necessary to complete the course:

Notes:

Past grade distribution
Total number of evaluated students: 38

ABS	NEABS
100,0	0,0

Lecturers: prof. RNDr. Rastislav Kráľovič, PhD.

Last change: 21.06.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.

COURSE DESCRIPTION

Academic year: 2025/2026

University: Comenius University Bratislava

Faculty: Faculty of Mathematics, Physics and Informatics

Course ID:	**Course title:**
FMFI.KI/3-INF-002/15	Theory and Methodology of Informatics

Educational activities:
Type of activities: course
Number of hours:
per week: 4 **per level/semester:** 52
Form of the course: on-site learning

Number of credits: 10

Recommended semester: 2.

Educational level: III.

Prerequisites:

Antirequisites: FMFI.KI/3-INF-002/00

Course requirements:
The grade is based on the final exam. Grades: A 90%, B 80%, C 70%, D 60%, E 50%.

Learning outcomes:
The student will acquire deeper knowledge in some area of computer science. The content usually covers an area that is not directly the topic of the dissertation, but is related to it in context, motivation or methods.

Class syllabus:
The specific content of the course may vary in individual years according to the composition of students. The scope of the course usually covers about 300-500 pages of text intended for postgraduate study.

Recommended literature:

Languages necessary to complete the course:
Slovak, English

Notes:

Past grade distribution
Total number of evaluated students: 41

ABS	NEABS
97,56	2,44

Lecturers: doc. Mgr. Bronislava Brejová, PhD., doc. RNDr. Edita Mačajová, PhD.

Last change: 21.06.2022

Approved by: prof. RNDr. Rastislav Kráľovič, PhD.