

# Course descriptions

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## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-412/22			<b>Course title:</b> Abstract of a contribution from a domestic or an international conference (originally AFG, AFK, AFH, AFL)				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 4							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 1							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-505/22				<b>Course title:</b> Bachelor's thesis reviewer			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:    per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 3							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-504/22				<b>Course title:</b> Bachelor's thesis supervisor			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 8							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-414/22				<b>Course title:</b> Completing an long-term ERASMUS+ internship (minimum 60 days)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-415/22			<b>Course title:</b> Completion of SAIA/NŠP internship program or other equivalent (minimum 30 days)				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:    per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-416/22			<b>Course title:</b> Completion of a short-term foreign internship (15-30 days, and related to the topic of the PhD thesis)				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 7							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-001/22	<b>Course title:</b> Dissertation 1
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation will be conducted individually based on the doctoral student's individual study plan, as well as on the basis of an agreement between the academic supervisor and doctoral student. Evaluation is standard and shall reflect a sufficient orientation of the student in the presented subject matter for successful course completion according to the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: By passing this subject, the student will achieve sufficient orientation in the project issue of the dissertation thesis based on specific individual topics. This set task of knowledge is essential for a firmly established theoretical readiness of the course graduate in terms of his/her awareness, and equally supports his/her potential in a wide field of applied practice. Undoubtedly, the outcomes of his/her education will also be reflected in the student's overview in terms of methodological approaches in the subject matter.	
<b>Class syllabus:</b> Brief outline of the course: The subject Dissertation Thesis is a compulsory part of the doctoral student's study activities. The student requires a supremely individual character with regard to the specifics of the individual topics of the dissertation thesis. The basic syllabus should already be evident within the individual study plan of the doctoral student. The subject is important especially in terms of understanding the basic theoretical and methodological aspects of the solution to the topic of the dissertation thesis with emphasis on self-study and consultation with the academic supervisor and a wide spectrum of consultants, who will take part in creating the professional potential of the doctoral student for the next (scientific) stage of his/her studies.	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	

<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b> 12.10.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-002/22	<b>Course title:</b> Dissertation 2
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation will be conducted individually based on the doctoral student's individual study plan, as well as on the basis of an agreement between the academic supervisor and doctoral student. Evaluation is standard and shall reflect a sufficient orientation of the student in the presented subject matter for successful course completion according to the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: By passing this subject, the student will achieve sufficient orientation in the project issue of the dissertation thesis based on specific individual topics. This set task of knowledge is essential for a firmly established theoretical readiness of the course graduate in terms of his/her awareness, and equally supports his/her potential in a wide field of applied practice. Undoubtedly, the outcomes of his/her education will also be reflected in the student's overview in terms of methodological approaches in the subject matter.	
<b>Class syllabus:</b> Brief outline of the course: The subject Dissertation Thesis is a compulsory part of the doctoral student's study activities. The student requires a supremely individual character with regard to the specifics of the individual topics of the dissertation thesis. The basic syllabus should already be evident within the individual study plan of the doctoral student. The subject is important especially in terms of understanding the basic theoretical and methodological aspects of the solution to the topic of the dissertation thesis with emphasis on self-study and consultation with the academic supervisor and a wide spectrum of consultants, who will take part in creating the professional potential of the doctoral student for the next (scientific) stage of his/her studies.	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	

<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b> 18.10.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-003/22	<b>Course title:</b> Dissertation 3
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation will be conducted individually based on the doctoral student's individual study plan, as well as on the basis of an agreement between the academic supervisor and doctoral student. Evaluation is standard and shall reflect a sufficient orientation of the student in the presented subject matter for successful course completion according to the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: By passing this subject, the student will achieve sufficient orientation in the project issue of the dissertation thesis based on specific individual topics. This set task of knowledge is essential for a firmly established theoretical readiness of the course graduate in terms of his/her awareness, and equally supports his/her potential in a wide field of applied practice. Undoubtedly, the outcomes of his/her education will also be reflected in the student's overview in terms of methodological approaches in the subject matter.	
<b>Class syllabus:</b> Brief outline of the course: The subject Dissertation Thesis is a compulsory part of the doctoral student's study activities. The student requires a supremely individual character with regard to the specifics of the individual topics of the dissertation thesis. The basic syllabus should already be evident within the individual study plan of the doctoral student. The subject is important especially in terms of understanding the basic theoretical and methodological aspects of the solution to the topic of the dissertation thesis with emphasis on self-study and consultation with the academic supervisor and a wide spectrum of consultants, who will take part in creating the professional potential of the doctoral student for the next (scientific) stage of his/her studies.	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	

<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b> 18.10.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-004/22	<b>Course title:</b> Dissertation 4
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 4.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation will be conducted individually based on the doctoral student's individual study plan, as well as on the basis of an agreement between the academic supervisor and doctoral student. Evaluation is standard and shall reflect a sufficient orientation of the student in the presented subject matter for successful course completion according to the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: By passing this subject, the student will achieve sufficient orientation in the project issue of the dissertation thesis based on specific individual topics. This set task of knowledge is essential for a firmly established theoretical readiness of the course graduate in terms of his/her awareness, and equally supports his/her potential in a wide field of applied practice. Undoubtedly, the outcomes of his/her education will also be reflected in the student's overview in terms of methodological approaches in the subject matter.	
<b>Class syllabus:</b> Brief outline of the course: The subject Dissertation Thesis is a compulsory part of the doctoral student's study activities. The student requires a supremely individual character with regard to the specifics of the individual topics of the dissertation thesis. The basic syllabus should already be evident within the individual study plan of the doctoral student. The subject is important especially in terms of understanding the basic theoretical and methodological aspects of the solution to the topic of the dissertation thesis with emphasis on self-study and consultation with the academic supervisor and a wide spectrum of consultants, who will take part in creating the professional potential of the doctoral student for the next (scientific) stage of his/her studies.	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	

<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b> 10.10.2022	
<b>Approved by:</b>	



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-005/22	<b>Course title:</b> Dissertation 5
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 5.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation will be conducted individually based on the doctoral student's individual study plan, as well as on the basis of an agreement between the academic supervisor and doctoral student. Evaluation is standard and shall reflect a sufficient orientation of the student in the presented subject matter for successful course completion according to the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: By passing this subject, the student will achieve sufficient orientation in the project issue of the dissertation thesis based on specific individual topics. This set task of knowledge is essential for a firmly established theoretical readiness of the course graduate in terms of his/her awareness, and equally supports his/her potential in a wide field of applied practice. Undoubtedly, the outcomes of his/her education will also be reflected in the student's overview in terms of methodological approaches in the subject matter.	
<b>Class syllabus:</b> Brief outline of the course: The subject Dissertation Thesis is a compulsory part of the doctoral student's study activities. The student requires a supremely individual character with regard to the specifics of the individual topics of the dissertation thesis. The basic syllabus should already be evident within the individual study plan of the doctoral student. The subject is important especially in terms of understanding the basic theoretical and methodological aspects of the solution to the topic of the dissertation thesis with emphasis on self-study and consultation with the academic supervisor and a wide spectrum of consultants, who will take part in creating the professional potential of the doctoral student for the next (scientific) stage of his/her studies.	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	

<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b> 06.10.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-006/22	<b>Course title:</b> Dissertation 6
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 6.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b>	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b>	
<b>Recommended literature:</b>	
<b>Languages necessary to complete the course:</b>	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b>	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-007/22	<b>Course title:</b> Dissertation 7
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 7.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b>	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b>	
<b>Recommended literature:</b>	
<b>Languages necessary to complete the course:</b>	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b>	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-024/22	<b>Course title:</b> Dissertation 8
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 8.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b>	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b>	
<b>Recommended literature:</b>	
<b>Languages necessary to complete the course:</b>	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b>	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/PriF-DSSZ-025/22	<b>Course title:</b> Dissertation 9
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 9.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b>	
<b>Learning outcomes:</b>	
<b>Class syllabus:</b>	
<b>Recommended literature:</b>	
<b>Languages necessary to complete the course:</b>	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b>	
<b>Last change:</b>	
<b>Approved by:</b>	

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-400/22	<b>Course title:</b> Dizertačná skúška
<b>Number of credits:</b> 15	
<b>Educational level:</b> III.	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation takes place as a part of the State examination in accordance to the Study regulations of the Faculty of Natural Sciences UK in Bratislava, as well as submission of the written part of the dissertation thesis within the set deadline. The subjects of the state examination include a discussion about the written work of the dissertation examination (prepared by the doctoral student), as well as other subjects of the oral examination (ad hoc) approved by the Dean. Assessment is standard and reflects the student's sufficient orientation in the issue. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: The objective of the course is to gain basic habits and cultural-ethical aspects of working with scientific literature, evaluation, and systemization of the studied knowledge. The doctoral student needs to successfully pass the dissertation examination according to the act on Universities and Study Regulations of the Faculty of Natural Sciences of Comenius University in Bratislava.	
<b>Class syllabus:</b> Brief outline of the course: Based on the description of the starting points, principles, and conclusions from the published results of the studied issues, the aim is to teach the doctoral student how to process critical research. A further objective is to understand the principles of scientific work and its legal, physical, and social attributes. The main output is the elaboration of the written work for the dissertation examination and its successful completion in accordance with the Study Regulations of the Faculty of Natural Sciences UK. The form and content of the work is regulated by article 34, paragraph 4 of the Study Regulations of the Faculty of Natural Sciences UK. The dissertation examination consists of a part consisting of a discussion of the written work for the dissertation examination, as well as a part in which the doctoral student needs to demonstrate theoretical knowledge according to the focus of the dissertation topic. The composition of the Examination Committee, the determination of the Opponent (expert examiner) and the general course of the dissertation examination are governed by the current Study Regulations of the Faculty of Natural Sciences UK.	
<b>State exam syllabus:</b>	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	
<b>Languages necessary to complete the course:</b>	

Required language for successful course completion: Slovak language in combination with English (study literature in English)
<b>Last change:</b> 19.10.2022
<b>Approved by:</b>



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-014/22	<b>Course title:</b> Geochemia hornín
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 1., 3.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Active participation in the lectures and consultations, examination - the condition of completion must be demonstrated by at least 60% of the required knowledge. The completion of the course is evaluated by the classification degrees completed or not completed. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The PhD student will be able to understand the geochemical terminology. He/she will get the information about analytical methods and principles of processing of bulk-rock and pulp measurements. He/she will learn basic principles of geochemistry of major and trace elements in rocks and the geochemical normalizations. He/she will get the information on geochemistry of magmatic, metamorphic and sedimentary rocks.	
<b>Class syllabus:</b> The characteristic of basic geochemical principles and the bulk-Earth composition. Expression of chemical element abundances and geochemical ratios. Geochemical standards and normalizations. The preparation of geological samples and geochemical measurements. Fractionation of chemical elements. Geochemistry of major and trace elements. Compatible and incompatible elements. LIL and HFS elements. The distribution of chemical elements in terrestrial and extraterrestrial rocks.	
<b>Recommended literature:</b> Bouška V. et al., 1980: Geochemie. Praha, Akademie. Huraiová, M., Ondrejka M. 2016: Petrológia magmatických hornín. Vydavateľstvo UK. 354 s. White W.M. 2013: Geochemistry. Wiley-Blackwell, 668 p. Rollinson H. 1993: Using geochemical data: evaluation, presentation, interpretation. Longman Group UK. Tutorial texts and presentations with examples.	
<b>Languages necessary to complete the course:</b> Slovak or English language	

<b>Notes:</b>	
<b>Past grade distribution</b>	
Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b> doc. Mgr. Martin Ondrejka, PhD., prof. RNDr. Monika Huraiová, PhD., doc. Mgr. Katarína Šarinová, PhD.	
<b>Last change:</b> 17.09.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-010/22	<b>Course title:</b> Geochemia sedimentov tokov a nádrží
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 3.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed (passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of this advanced course from the scientific discipline of Geochemistry intended for PhD degree is to provide information regarding streams and basin geochemistry, their origin and mineralogical and chemical composition development. The student will understand relationship between wider environment of streams and basins and sediments formation, as well as influence of anthropogenic factors. The student will also learn methods of sediments sampling and chemical analyses, as well as data processing using statistical methods and in GIS environment. Based on this knowledge, students will be able to independently decide on the strategy of geochemical research of sediments and results interpretation.	
<b>Class syllabus:</b> Definition of stream and basin sediment concept, its composition, origin and importance. Development of mineralogical and chemical composition of sediments. Influence of hydrodynamic properties of streams to the development of sediments. Applications of geochemical indices in exogenous geochemistry of sediments research. Organic matters of natural origin in the sediments. Sorption properties of the sediments. Applications of methods of stable and radioactive isotope geochemistry in sediments research. Inorganic pollutants in sediments. Organic pollutants in sediments. Methods and strategy of stream and reservoir sediments sampling and chemical analyses. Data processing of stream and reservoir sediments samples using statistical methods and GIS and their interpretation. Geochemical atlases of stream and reservoir sediments in Slovakia and in the world.	
<b>Recommended literature:</b> Bodiš, D. - Rapant, S. et al.: Geochemický atlas Slovenskej republiky, časť VI: Riečne sedimenty [online]. Bratislava: Štátny geologický ústav Dionýza Štúra, 2011. Dostupné na internete: <a href="http://apl.geology.sk/atlasrs">http://apl.geology.sk/atlasrs</a> .	

Reible, D. - Lánczos, T. (eds.): Assessment and Remediation of Contaminated Sediments. 1. vyd. - Dordrecht : Springer, 2006. - 246 s. - (NATO Science Series IV. Earth and Environmental Sciences ; Vol. 73)

Bauer A., & Velde B.D. (2014): Geochemistry at the Earth's Surface. Movement of Chemical Elements. Springer, 327 s.

Spellman F.R. (2017): Contaminated Sediments in Freshwater Systems. CRC Press, Taylor & Francis Group, 399 s.

Selected articles in scientific journals that deal with the geochemistry of streams and reservoir sediments.

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

**Lecturers:** doc. RNDr. Stanislav Rapant, DrSc., Mgr. Tomáš Lánczos, PhD.

**Last change:** 17.09.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-007/22	<b>Course title:</b> Globálne geochemické problémy životného prostredia
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed(passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of this course, intended for the PhD level, is to present a geochemical view of global environmental problems in the context of new social challenges. Exact geochemical approaches to global environmental problems allow students to gain a comprehensive idea of appropriate models of environmental use in terms of sustainable land development. Based on this knowledge, students will be able to independently conduct geochemical research and participate in large-scale projects of interdisciplinary study of the environment.	
<b>Class syllabus:</b> Geochemical aspects of global environmental problems. Laboratory and field geochemical studies as a basis for changes and revision of legislative procedures in environmental assessment. Global cycles of contaminants in the environment - geogenic vs. anthropogenic sources. Behavior and transport of priority contaminants in individual environmental compartments. The issue of degradation of petroleum substances in the environment. Global problems focusing on radioactive contaminants. Geochemical aspects of the impact of different types of landfills on the environment. The issue of waste disposal in the system of circular economy as a challenge to environmental protection. Global vs. local changes in environmental compartments. Involvement of the general public in the issue of environmental contamination ("citizen science"). Black carbons, their geochemistry and environmental impact.	
<b>Recommended literature:</b> Koelmans, A.A., Jonker, M.T.O., Cornelissen, G., Bucheli, T.D., Van Noort, P.C.M., Gustafsson, Ö. 2006. Black carbon: The reverse of its dark side. Chemosphere, 63, 365-377. <a href="https://doi.org/10.1016/j.chemosphere.2005.08.034">https://doi.org/10.1016/j.chemosphere.2005.08.034</a>	

Taylor, M.P., Isley, C.F., Fry, K.L., Liu, X., Gillings, M.M., et al. 2021. A citizen science approach to identifying trace metal contamination risks in urban gardens. *Environment International*, 155, art. no. 106582. <https://doi.org/10.1016/j.envint.2021.106582>

Vergara, S.E., Tchobanoglous, G. 2012. Municipal solid waste and the environment: a global perspective. *The Annual Reviews of Environment and Resources*, 37, 277-309. <https://doi.org/10.1146/annurev-environ-050511-122532>

And other selected articles from scientific journals that deal with topics in this course/subject.

**Languages necessary to complete the course:**

English language

**Notes:**

**Past grade distribution**

Total number of evaluated students: 0

ABS	NEABS
0,0	0,0

**Lecturers:** doc. RNDr. Ján Milička, CSc.

**Last change:** 17.09.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-400/22				<b>Course title:</b> Grant CU or Grant SAS or equivalent grant			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 12							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 2							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-012/22	<b>Course title:</b> Inovatívne sanačné postupy pre kontaminované geomateriály
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 3., 5.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed (passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of the course is to acquaint students with the latest methods and technologies used for remediation of contaminated geomaterials (sediments, soil, water). Students will learn that in addition to the primary remediation purpose, some innovative methods and technologies can also serve to mitigate the negative effects of climate change. Innovative methods and technologies also seek to preserve the principles of the circular economy, have lower energy and financial demands and do not generate new waste. The course will present specific examples of the application of new technologies in practice in Slovakia or abroad.	
<b>Class syllabus:</b> Brief overview of innovative remediation methods and technologies - biochar, activated carbon, modified sorbents, composites, electrochemical methods, (bio) stabilization, (bio) immobilization, (bio) leaching, biodegradation. Biochar - properties, production, advantages, disadvantages, use in various areas of the economy (agriculture, climate change, circular economy), use for remediation of geomaterials/waters polluted with inorganic and organic contaminants. Activated carbon - properties, production, advantages, disadvantages, use in various sectors of the economy. Modified sorbents and composites based on biochar, nanoiron, natural and synthetic zeolites, amorphous oxides Mn, Al, Fe. Use of microorganisms and plants in remediation of geomaterials / waters polluted with organic and inorganic contaminants, (bio) stabilization, (bio) immobilization, (bio) leaching. Electrochemical methods - use for remediation of geomaterials / waters polluted with organic contaminants. Examples of application of innovative remediation methods in practice.	
<b>Recommended literature:</b> Publications available in Scopus, Web of Science, Science direct, Springer, Wiley and other relevant databases. Papers from scientific events.	
<b>Languages necessary to complete the course:</b>	



Slovak language, English language	
<b>Notes:</b>	
<b>Past grade distribution</b>	
Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b> Mgr. Veronika Špirová, PhD., Mgr. Tomáš Faragó, PhD., Mgr. Roman Tóth, PhD., Ing. Hana Horváthová, PhD., doc. RNDr. Ľubomír Jurkovič, PhD.	
<b>Last change:</b> 17.09.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-413/22				<b>Course title:</b> Intellectual Property Rights Document (originally AGJ)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 10							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-009/22	<b>Course title:</b> Mikrobiálne biofilmy v biogeochémií anorganických kontaminantov
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 2., 4.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed (passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of this advanced course is to provide essential and up-to-date information on (structural and physiological) properties of microbial biofilms in relation to their significance for geochemistry of elements. The objectives of this course also include the presentation of new trends and techniques that are applied in biofilms’ preparation and characterization to provide new information on their practical application in the environmental biotechnology, and highlight the risks and benefits associated with utilization of biofilms in industrial applications and plant production in agriculture and phytoremediation.	
<b>Class syllabus:</b> Cell surfaces; secondary metabolites and extracellular polymeric substances; Structure and physiology of biofilms; Dynamics of bacterial synthesis of biofilms – genetic and environmental regulation of biofilm formation; Fungal biofilms; Resistance and adaptability of microorganisms in relation to the properties of biofilm; Rhizosphere – concept of biofilm in plants; Application of biofilm-forming microorganisms in phytoremediation; Techniques applied in research on biofilms in context of environmental remediation of potentially toxic substances; Biochemical processes and formation of gradients in biofilms; Bioreactors – technological aspects and applications; Formation and application of biofilms in water treatment methods; composite (bio)sorbents; Biocorrosion – biofilm in context of bioextraction and biodeterioration; Biodegradation of organic pollutants in biofilm’s environment; Biofilms in agriculture; Perspectives of genetic engineering in biofilm preparation that is applicable in remediation of contaminated soils, sediments and waters.	
<b>Recommended literature:</b> Lear, G (2016): Biofilms in Bioremediation. Poole: Caister Academic Press. Pandey, VC a Singh V (2020): Bioremediation of Pollutants. Amsterdam: Elsevier.	

Simoes a kol. (2020): Recent Trends in Biofilm Science and Technology. Amsterdam: Elsevier	
<b>Languages necessary to complete the course:</b> Slovak language in combination with English language (available study literature))	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b> Mgr. Eva Duborská, PhD., Mgr. Martin Šebesta, PhD., doc. RNDr. Martin Urík, PhD.	
<b>Last change:</b> 17.09.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-013/22	<b>Course title:</b> Monitoring a environmentálne riziká
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed(passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Doctoral students will get acquainted with the most significant events caused by industrial accidents in the world, with the consequences for the biota and the health of the population, as well as for the overall degradation of the natural environment with its subsequent remediation or corrective action. The lectures emphasize the protection of the environment, its adequate preservation for future generations and the sustainable development of society. In addition to the so-called "Hot spots" in the world, students get acquainted with specific cases of damage to the natural environment by industrial activities in Slovakia as well as the gradual effort to address these environmental burdens.	
<b>Class syllabus:</b> Bioindications and biomonitoring, toxic metals and their bioaccumulation. Human population endangerment by organohalogens, DDT, PCB, PCDD, PCDF. Nanomaterials and nanocomposites and their impact on the environment. Most polluted areas by industrial and mining activities in the Slovak Republic. Relationship between resources and waste, solid waste disposal, hazardous waste. Soil degradation and soil damage, soil protection and treatment, contamination with oil products. Soil erosion, destruction and compaction, greenhouse effect and acid rain in interaction with soil and water. Characterization of common analytical methods for monitoring pollution by metals and other pollutants. Power plant fly ash, magnesite fly ash and metal-rich wastes and their disposal or recovery as secondary raw materials. Radionuclides and radon and their impact on physical degradation of the human environment. Vehicular transport and its impact on air quality, exhaust gases, air dust. Complementary analytical methods used to verify the presence of environmental pollutants in solid matrices. Debate on literary research processed in written work for the dissertation exam.	
<b>Recommended literature:</b>	

<p>CHMIELEWSKÁ, E.; BEDRNA, Z.: Rizikové látky a environmentálne hazardy, Bratislava 2007, CICERO, sro (114 str.), ISBN: 978-80-969678-0-3.</p> <p>CHMIELEWSKÁ, E., KURUC, J.: Odpady (Nakladanie s tuhým neaktívnym a rádioaktívnym odpadom), Epos-Vydavateľstvo Univerzity Komenského Bratislava 2008, ISBN: 978-80-223-2407-6 (336 str.).</p> <p>CHMIELEWSKÁ, E., REHÁČKOVÁ, T., FENDEK, M., FEDOR, P., BEDRNA, Z.: Ochrana a využívanie prírodných zdrojov, Vydavateľstvo Epos, ISBN: 978-80-8057-846-6, 349 str. (autor: 111 str.), Bratislava 2011.</p> <p>KHUN, M., ĎURŽA, O., MILIČKA, J., DLAPA, P.: Environmentálna geochémia, Geo-grafika Bratislava 2008 (278 str.).</p>					
<p><b>Languages necessary to complete the course:</b> Slovak language, English language</p>					
<p><b>Notes:</b></p>					
<p><b>Past grade distribution</b> Total number of evaluated students: 0</p> <table> <tr> <th>ABS</th><th>NEABS</th></tr> <tr> <td>0,0</td><td>0,0</td></tr> </table>		ABS	NEABS	0,0	0,0
ABS	NEABS				
0,0	0,0				
<p><b>Lecturers:</b> prof. Ing. Eva Chmielewská, CSc.</p>					
<p><b>Last change:</b> 17.09.2022</p>					
<p><b>Approved by:</b></p>					

## STATE EXAM DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DSSZ-303/22	<b>Course title:</b> Obhajoba dizertačnej práce
<b>Number of credits:</b> 30	
<b>Educational level:</b> III.	
<b>Course requirements:</b> Conditions for passing the course: Course evaluation takes place as a part of the State examination in accordance to the Study regulations of the Faculty of Natural Sciences UK in Bratislava upon submission of the written part of the dissertation thesis (as final work). Assessment is standard and reflects the student's sufficient orientation in the issue. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> Educational outcomes: The aim of the course is to capitalise on theoretical, methodological and applied knowledge of doctoral studies in the elaboration and subsequent defence of the dissertation thesis, and thus the successful completion of doctoral studies.	
<b>Class syllabus:</b> Brief outline of the course: The student's dissertation thesis will demonstrate his/her ability and readiness for independent scientific and creative activities in the area of research or development or for independent theoretical and creative artistic creativity. It should be characterised by a high degree of analysis and synthesis of knowledge, as well as a sufficient overview of existing literature. The work must be original and created by the author in compliance with the rules of working with information sources. The academic work must not appear to be plagiarised, nor infringe the copyrights of other authors. The author is required to thoroughly cite the information sources used, list the specific results of other authors or team of authors by citing the source, accurately describe the methods and working procedures of other authors or teams of authors, and document the laboratory results and field research of other authors or teams of authors. Style of citation is governed by the practice in the given scientific field, respecting the relevant norms and standards.	
<b>State exam syllabus:</b>	
<b>Recommended literature:</b> Recommended literature: No specifications regarding the character of a specific topic for the dissertation thesis. Recommended literature is included in the doctoral student's individual study plan.	
<b>Languages necessary to complete the course:</b> Required language for successful course completion: Slovak language in combination with English (study literature in English)	
<b>Last change:</b> 24.10.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-508/22				<b>Course title:</b> Other activities			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 1							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 1							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-501/22				<b>Course title:</b> P1 Pedagogical output as a whole (originally ACA, ACB, BCI, BCB)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-503/22				<b>Course title:</b> P2 Pedagogical output as a part (originally BCK)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 10							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-502/22				<b>Course title:</b> P2 Pedagogical output as part (originally ACC, ACD)			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 15							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-507/22				<b>Course title:</b> Pedagogical activity (4 hours/WS and 4 hours/SS) or alternative pedagogical work			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 2							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 5							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-011/22	<b>Course title:</b> Pokročilé metódy geochemického štúdia životného prostredia
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 1., 3.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed (passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of this course, which is designed for doctoral studies, is to present integrated procedures for the exact assessment and geochemical study of individual components of the environment in the context of new societal problems. The natural geological environment and anthropogenically influenced environment significantly limit land use. and exact approaches to defining geochemical processes taking place in the country will enable students to gain a comprehensive understanding of appropriate environmental strategies, including assessing the impact of individual processes on environmental quality and public health. Based on this knowledge, students are able to independently carry out geochemical research in a country with different ways of using individual components of the environment. The acquired knowledge is a necessary practical basis for scientific and professional work in the study of environmental components.	
<b>Class syllabus:</b> Integrated geochemical procedures for the assessment of environmental components with a focus on priority contaminants. Identification of micro-contaminants in different types of geomaterials and definition of their mobility. Identification of transboundary environmental contamination using trace element isotopes - "Multiple Isotope Fingerprints". A comprehensive view of the issue of the impact of brownfields on the quality of environmental components. Purposeful hygienic audit of municipalities and cities with a focus on point and diffuse sources of pollution. Spatial distribution of major and trace elements in relation to the definition of background concentrations of priority contaminants for individual components of the environment. Influence of point sources of trace elements on diffuse environmental contamination - regional synthesis. Deficit elements in the environment - geochemical approach to potential possibilities of adjusting the balance of trace elements in the environment. Proportional distribution of contaminant sources in the environment using combined geochemical and mathematical methods (stable isotopes of trace metals, quantitative non-negative factor models, congener profiles of organic contaminants, etc.).	

<b>Recommended literature:</b> Selected articles from scientific journals that deal with advanced and integrated methodological approaches to the study of the environment in a broader context.	
<b>Languages necessary to complete the course:</b> English language	
<b>Notes:</b>	
<b>Past grade distribution</b> Total number of evaluated students: 0	
ABS	NEABS
0,0	0,0
<b>Lecturers:</b> doc. RNDr. Stanislav Rapant, DrSc., doc. RNDr. Ľubomír Jurkovič, PhD.	
<b>Last change:</b> 17.09.2022	
<b>Approved by:</b>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KJ/N-DSSZ-026/22	<b>Course title:</b> Professional English 1
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 1.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Each course participant is required to achieve proficient knowledge and usage of the English grammar, professional vocabulary, reading and listening comprehension, writing professional texts and oral presentations. Credits will be awarded to students who will demonstrate active participation and deliver all set tasks and assignments successfully. The course participants will be awarded a pass or a fail upon course completion.	
<b>Learning outcomes:</b> Upon completion of the course, PhD students will effectively use the English language for professional purposes. They will proficiently comprehend targeted written and audio texts and present their viewpoints in required forms.	
<b>Class syllabus:</b> Theoretical and practical skills in professional written communication include appropriate structure of formal written texts (emails, application forms, personal statements, cover letters, abstracts, scientific articles, paraphrasing, using citations, citing sources, etc.) The course also focuses on theoretical explanation of correct delivery of oral texts, professional presentations and discussions. The course primary target is to facilitate PhD students with proficient usage of all the aspects of written and oral communication in various settings.	
<b>Recommended literature:</b> Armer, T.: Cambridge English for Scientists CD ROM Writing Professional English Team of authors: Test your Listening Skills: A Handbook for Science Doctoral students Team of authors: Test your Reading Skills: A Handbook for Science Doctoral students	
<b>Languages necessary to complete the course:</b> English	
<b>Notes:</b>	

<b>Past grade distribution</b>							
Total number of evaluated students: 2							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Aneta Barnes							
<b>Last change:</b> 03.10.2022							
<b>Approved by:</b>							



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF.KDPP/N-DSSZ-500/22				<b>Course title:</b> Selected topics from university pedagogy for non-teachers			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 3							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> RNDr. Jana Ciceková, PhD., doc. RNDr. PaedDr. Zuzana Haláková, PhD., PhDr. ThLic. Peter Ikhardt, PhD.							
<b>Last change:</b> 30.09.2022							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KJ/N-DSSZ-022/22	<b>Course title:</b> Slovak for Foreign Doctoral Students 1
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 3	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The objective of the course is to acquire the basics of Slovak in a communicative way, to develop individual language skills (listening, reading, writing and speaking) based on the Common European Framework of Reference for Languages (CEFR) for the level A1, from a complete beginner level. Based on the completion of the course, the participants are able to understand and react to common situations. They are able to speak about themselves, ask for more information they need to know. Scale of assessment (preliminary/final): Credits will not be awarded to students who receive less than 60% on the final examination.	
<b>Learning outcomes:</b> The objective of the course is to acquire the basics of Slovak in a communicative way, to develop individual language skills (listening, reading, writing and speaking) based on the Common European Framework of Reference for Languages (CEFR) for the level A1, from a complete beginner level. Based on the completion of the course, the participants are able to understand and react to common situations. They are able to speak about themselves, ask for more information they need to know.	
<b>Class syllabus:</b> Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1 (Lekcia: 1-5). UK v Bratislave, 2012. Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1+A2, cvičebnica Audio program: <a href="https://uniba.sk/krizom-krazom">https://uniba.sk/krizom-krazom</a> Worksheets, website: <a href="https://slovake.eu/sk">https://slovake.eu/sk</a>	
<b>Recommended literature:</b> Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1 (Lekcia: 1-5). UK v Bratislave, 2012. Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1+A2, cvičebnica Audio program: <a href="https://uniba.sk/krizom-krazom">https://uniba.sk/krizom-krazom</a> Worksheets, website: <a href="https://slovake.eu/sk">https://slovake.eu/sk</a>	

<b>Languages necessary to complete the course:</b> Slovak in combination with English (the study literature is in both Slovak and English)							
<b>Notes:</b> It is possible to register for the course just once. Students may begin in either the Summer or Winter semester.							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Karin Rózsová Wolfová							
<b>Last change:</b> 28.09.2022							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KJ/N-DSSZ-023/22	<b>Course title:</b> Slovak for Foreign Doctoral Students 2
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Type, extent and method of academic activities: 2 hours (at 60 min. per hour) of weekly lessons in the form of seminars. All academic activities will take place during the lessons. Number of credits: 3 credits Recommended semester/trimester of study: from 1st to 8th semester Level of study: third Subject conditions: Slovak for Foreign Doctoral Students 1 Requirements for course completion: active participation during lessons, ongoing work on the assignments. There will be a final examination at the end of the semester. Scale of assessment (preliminary/final): Credits will not be awarded to students who receive less than 60% on the final examination.	
<b>Learning outcomes:</b> Course Objectives: The objective of the course is to acquire the basics of Slovak in a communicative way, to develop individual language skills (listening, reading, writing and speaking) based on the Common European Framework of Reference for Languages (CEFR) for the level A1 - intended for beginner or pre-intermediate.	
<b>Class syllabus:</b> The lessons contain the basics of Slovak grammar which are relevant to the specifics of Slovak as a foreign language. Selected grammatical phenomena, conjugation and declination are practised. Vocabulary is focused on real-life communication needs.	
<b>Recommended literature:</b> Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1 Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1+A2, workbook Audio program: <a href="https://uniba.sk/krizom-krazom">https://uniba.sk/krizom-krazom</a> Worksheets are prepared by the course instructor. Portal: <a href="https://slovak.eunet.sk">https://slovak.eunet.sk</a>	
<b>Languages necessary to complete the course:</b> Slovak in combination with English (the study literature is in both Slovak and English)	

**Notes:**

It is possible to register for the course just once. Students may begin in either the Summer or Winter semester.

**Past grade distribution**

Total number of evaluated students: 0

A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

**Lecturers:** Mgr. Karin Rózsová Wolfová

**Last change:** 18.07.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KJ/N-DSSZ-024/22	<b>Course title:</b> Slovak for Foreign Doctoral Students 3
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Type, extent and method of academic activities: 2 hours (at 60 min. per hour) of weekly lessons in the form of seminars. All academic activities will take place during the lessons. Number of credits: 3 credits Recommended semester/trimester of study: from 1st to 8th semester Level of study: third Subject conditions: Slovak for Foreign Doctoral Students 2 Requirements for course completion: active participation during lessons, ongoing work on the assignments. There will be a final examination at the end of the semester. Scale of assessment (preliminary/final): Credits will not be awarded to students who receive less than 60% on the final examination.	
<b>Learning outcomes:</b> The objective of the course is to acquire the basics of Slovak in a communicative way, to develop individual language skills (listening, reading, writing and speaking) based on the Common European Framework of Reference for Languages (CEFR) for the levels A1 – A2. Intended for levels A1-A2, beginner to pre-intermediate	
<b>Class syllabus:</b> The lessons contain the basics of Slovak grammar which are relevant to the specifics of Slovak as a foreign language. Selected grammatical phenomena, conjugation and declination are practised. Vocabulary is focused on real-life communication needs.	
<b>Recommended literature:</b> Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1, A2 Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1+A2, workbook Audio program: <a href="https://uniba.sk/krizom-krazom">https://uniba.sk/krizom-krazom</a> Worksheets are prepared by the course instructor. Portal: <a href="https://slovake.eu/sk">https://slovake.eu/sk</a>	
<b>Languages necessary to complete the course:</b> Slovak in combination with English (the study literature is in both Slovak and English)	

**Notes:**

It is possible to register for the course just once. Students may begin in either the Summer or Winter semester.

**Past grade distribution**

Total number of evaluated students: 0

A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

**Lecturers:** Mgr. Karin Rózsová Wolfová

**Last change:** 18.07.2022

**Approved by:**

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KJ/N-DSSZ-028/22	<b>Course title:</b> Slovak for Foreign Doctoral Students 4
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 2	
<b>Recommended semester:</b>	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> Grading (Assessment/Evaluation): Active participation during lessons, ongoing work on the assignments. There will be a final examination at the end of the semester. Credits will be awarded to students who receive more than 60% on the final examination. The course participants will be awarded a pass or a fail upon course completion.	
<b>Learning outcomes:</b> Objectives and outcomes: The objective of the course is to acquire the basics of Slovak in a communicative way, to develop individual language skills (listening, reading, writing and speaking) based on the Common European Framework of Reference for Languages (CEFR) for the levels A1 – A2, pre-intermediate level. Based on the completion of the course, the participants are able to understand the common situations and they are able to have a discussion and comment basic daily scenarios.	
<b>Class syllabus:</b> Brief outline of the course: The lessons contain the basics of Slovak grammar which are relevant to the specifics of Slovak as a foreign language. Selected grammatical aspects (verb - conjugation/next conjugation classes, possessive pronouns, I like/enjoy doing something, I like something, comparison of adjectives and adverbs, conditional) are practised. Vocabulary is focused on real-life communication needs.	
<b>Recommended literature:</b> Recommended literature: Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1. UK v Bratislave, 2012. Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A2. (Lekcia 1-4). UK v Bratislave, 2012. Kamenárová, R. a kol.: Krížom-krážom, Slovenčina A1+A2, cvičebnica Audio program: <a href="https://uniba.sk/krizom-krazom">https://uniba.sk/krizom-krazom</a> Worksheets, website: <a href="https://slovake.eu/sk">https://slovake.eu/sk</a>	
<b>Languages necessary to complete the course:</b>	



Language of instruction: Slovak in combination with English (the study literature is in Slovak).							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b> Mgr. Karin Rózsová Wolfová							
<b>Last change:</b> 18.10.2022							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-506/22				<b>Course title:</b> Supervisor of the SSC contribution			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 4							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023	
<b>University:</b> Comenius University Bratislava	
<b>Faculty:</b> Faculty of Natural Sciences	
<b>Course ID:</b> PriF.KGCh/N-DEEG-008/22	<b>Course title:</b> Urbánna geochémia
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning	
<b>Number of credits:</b> 5	
<b>Recommended semester:</b> 2.	
<b>Educational level:</b> III.	
<b>Prerequisites:</b>	
<b>Course requirements:</b> The exam of the course will be in the form of an oral interview. The course is evaluated in the form of “completed (passed)” or “not completed (not passed)”. The conditions for successful course completion are in accordance with the Study Regulations of the Faculty of Natural Sciences UK.	
<b>Learning outcomes:</b> The aim of this advanced course from the scientific discipline of Geochemistry intended for PhD degree is to explain the impacts of urban areas on the environment and human health, especially in terms of changes in the chemical composition of individual compartments of the environment, such as soil, air and water. The student will understand not only issues, such as geochemical background, important for deriving the level of contamination of urban soils, sediments and deposited dust, but also sampling methods of individual compartments of the urban environment, the concept of oral and pulmonary bioaccessibility of inorganic and organic contaminants into the human body and the relationship between contaminated urban environment and human health. Based on this knowledge, students will be able to independently decide on the strategy of geochemical research in cities and possible solutions leading to the correction of the current situation or at least to mitigate the existing situation.	
<b>Class syllabus:</b> The need for urban geochemistry in modern society – definition, reason, purpose, history and trends of research. Urban environment as a source of trace chemical elements, organic pollutants, noise and heat. Methods and strategies for soil, sediment, dust and air sampling in the urban environment. Land-use of urban soils, their contamination with trace elements and organic pollutants and factors influencing the spatial distribution of their contents in urban soils. Urban air, dust and deposited sediment – reason for geochemical studies, PM10, PM2.5, factors influencing the content of inorganic and organic pollutants and health consequences of persistent contamination. Urban soil and human health – research methods, case studies at home and abroad. Cities as islands of heat and noise. The contribution of urban areas to greenhouse gas emissions and climate change. Bioavailability and bioaccessibility – the concept of these two terms, the importance of their study, “in vivo” and “in vitro” methods for the determination of bioavailability/bioaccessibility, the impact	

<p>of various environmental factors on the bioaccessibility of trace elements and organic micro-pollutants from solid environmental matrices. Advanced topics related to the relationship between the bioaccessibility of trace elements and the soil mineralogy. Identification and quantification of individual sources of pollutants from geochemical data – mathematical methods (PMF and CMB modelling) and the use of stable isotopes of chemical elements. Possibilities of mitigating the impacts of cities on the environment and human health through the reduction of pollutant emission sources and other measures.</p>	
<p><b>Recommended literature:</b> Johnson, C.C., Demetriades, A., Locutura, J., Ottesen, R.T., 2011. Mapping the chemical environment of urban areas. John Wiley &amp; Sons, Ltd., The Atrium, Southern Gate, Chichester, West Sussex. Selected articles in scientific journals that deal with the urban geochemistry.</p>	
<p><b>Languages necessary to complete the course:</b> English language</p>	
<p><b>Notes:</b></p>	
<p><b>Past grade distribution</b> Total number of evaluated students: 0</p>	
ABS	NEABS
0,0	0,0
<p><b>Lecturers:</b> prof. RNDr. Edgar Hiller, PhD.</p>	
<p><b>Last change:</b> 17.09.2022</p>	
<p><b>Approved by:</b></p>	

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-404/22			<b>Course title:</b> V1 Scientific output as a whole - ESB monograph (originally AAA, ABA), individual authorship less than 3 AH				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-401/22			<b>Course title:</b> V1 Scientific output as a whole – ESB monograph (originally AAA, ABA), individual authorship share $\geq 3$ AH				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 30							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-405/22			<b>Course title:</b> V2 Scientific output as part - study in ESB or collection (originally AAB, ABA, ABB), individual authorship less than 3 AH				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-402/22			<b>Course title:</b> V2 Scientific output as part - study in ESB or collection (originally AAB, ABA, ABB), individual authorship share $\geq 3$ AH				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 30							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							



## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-411/22		<b>Course title:</b> V2 Scientific output as part of ESB, collection - contribution in peer reviewed scientific collection, monograph (originally AEC, AFA, AFC, AED)					
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 6							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-406/22				<b>Course title:</b> V3 Scientific output as a part - study in a journal (originally AAB, ABA, ABB), individual authorship less than 3 AH			
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-403/22			<b>Course title:</b> V3 Scientific output as a part - study in a journal (originally AAB, ABA, ABB), individual authorship $\geq 3$ AH				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 30							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-410/22			<b>Course title:</b> V3 Scientific output in a journal outside the index databases (originally ADE, ADF)				
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 12							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 0							
A	ABS	B	C	D	E	FX	NEABS
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-407/22		<b>Course title:</b> V3 Scientific output in a journal registered by CCC, WOS, SCOPUS - JCR/Q1 – Q2 (originally ADC, ADD, ADM, ADN), first or corresponding author					
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> per week:   per level/semester: <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 50							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 1							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-408/22		<b>Course title:</b> V3 Scientific output in a journal registered by CCC, WOS, SCOPUS - JCR/Q3- Q4 (originally ADC, ADD, ADM, ADN), first or corresponding author					
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week: per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 40							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 1							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							

## COURSE DESCRIPTION

<b>Academic year:</b> 2022/2023							
<b>University:</b> Comenius University Bratislava							
<b>Faculty:</b> Faculty of Natural Sciences							
<b>Course ID:</b> PriF/N-DSSZ-409/22		<b>Course title:</b> V3 Scientific output in the journal registered by CCC, WOS, SCOPUS - JCR/Q1 – Q2 – Q3 - Q4 (originally ADC, ADD, ADM, ADN), co-author					
<b>Educational activities:</b> <b>Type of activities:</b> <b>Number of hours:</b> <b>per week:   per level/semester:</b> <b>Form of the course:</b> on-site learning							
<b>Number of credits:</b> 20							
<b>Recommended semester:</b>							
<b>Educational level:</b> III.							
<b>Prerequisites:</b>							
<b>Course requirements:</b>							
<b>Learning outcomes:</b>							
<b>Class syllabus:</b>							
<b>Recommended literature:</b>							
<b>Languages necessary to complete the course:</b>							
<b>Notes:</b>							
<b>Past grade distribution</b> Total number of evaluated students: 3							
A	ABS	B	C	D	E	FX	NEABS
0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>Lecturers:</b>							
<b>Last change:</b>							
<b>Approved by:</b>							