University: P. J. Šafá	University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ Course name: Analytical Cytometry ACM/12				
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 2 Per study period: 14 / 28 Course method: present				
Number of credits: 4	4			
Recommended semester/trimester of the course:				
Course level: II., III.				

Prerequisities:

Conditions for course completion:

Learning outcomes:

The goal of the course is to teach the students fundamental theoretical and practical aspects of analytical cytometry. The course covers multiple areas of methods in microscopy with special focus on flurescence and its application in confocal microscopy, morphometric measurements and their applications in cytology, determination of vital parameters and live cell imaging, basic methods for sample preparation etc.

Brief outline of the course:

Fundamentals of fluorescent methods, principles of fluorescence and various fluorescent methods (FRET, FLIM, FLIM-FRET, FRAP etc.), utilization of flurescent and phusion proteins. Principles of confocal microscopy (spinning disc CM, laser scanning CM), principles of colocalisation studies, software image analysis. Analyses on living cells – principles, hardware requirements, methods for vital parameters analyses, imaging methods with regard to lipids, cytoskeleton dynamics or cell division. Fluorescent dyes and their applications in analytical cytometry – nucleic acid, lipid, proteins, cytosceleton stainings, visualization of cell organelles, vital stainings, membrane transport, reactive oxygen and nitrogen species (ROS, NOS), membrane potential, pH etc.

Recommended literature:

1. R.D. Goldman a kol.: Live Cell Imaging – A Laboratory Manual, Cold Spring Harbour Laboratory Press, 2010

- 2. J.B. Pawley a kol.: Handbook of Biological Confocal Microscopy, Springer, 2006
- 3. D. Anselmetti a kol.: Single Cell Analysis, Wiley-Blackwell, 2009
- 4. A. Hibbs a kol.: Confocal Microscopy for Biologists, Kluwer Academic/Plenum Publishers, 2004

Course language:

Notes:

Course assessment Total number of assessed students: 19							
А	В	С	D	Е	FX	Ν	Р
5.26	0.0	0.0	0.0	0.0	0.0	0.0	94.74
Provides: RNDr. Rastislav Jendželovský, PhD.							
Date of last modification: 03.05.2015							
Approved: prof. RNDr. Eva Čellárová, DrSc.							

University: P. J. Šafá	University: P. J. Šafárik University in Košice				
Faculty: Faculty of S	Faculty: Faculty of Science				
Course ID: ÚBEV/ AMK/15	Course name: Aplikovaná mikrobiológia				
Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28				
Number of credits: 5					
Recommended seme	ster/trimester of the cours	2:			
Course level: III.					
Prerequisities:					
Conditions for cours Attendance of practic	e completion: als (at least 90%), final example	nination			
Študenti získajú pre biochemikálií a o vyu kyselinu mliečnu pro mikroorganizmov pr biopalivá.	Študenti získajú prehľad o využití mikroorganizmov v priemyselných procesoch pre výrobu biochemikálií a o využití rekombinantných DNA techník v priemysle. Ďalej získajú informácie o kyselinu mliečnu produkujúcich baktériách a ich využití v potravinárskom priemysle a o využití mikroorganizmov pri ochrane životného prostredia – čistenie odpadových vôd, bioremediácia, biopalivá.				
Brief outline of the course: Application of bacteria in industrial processes, biochemicals production. Application of recombinant DNA techniques in industry. Lactic acid bacteria and its application in food industry. Microbiology in food quality control. Application of microorganisms in environment protection – wastewater treatment, bioremediation, biofuels, microbiology of biogas plants.					
Recommended litera	iture:				
Course language:					
Notes:	Notes:				
Course assessment Total number of assessed students: 0					
	N P				
	0.0 0.0				
Provides: doc. RNDr. Peter Pristaš, CSc.					
Date of last modification: 03.05.2015					
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚBEV/ PVS/04	Durse ID: ÚBEV/ Course name: Author's patents, discoveries, software		
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2			
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of assessed students: 1			
abs n			
100.0 0.0			
Provides:			
Date of last modification:			
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.		

University:	University: P. J. Šafárik University in Košice						
Faculty: Fac	Faculty: Faculty of Science						
Course ID: BI/14	: ÚBEV/ Course name: Bioinformatics						
Course type Course typ Recommen Per week: Course me	Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 1 / 3 Per study period: 14 / 42 Course method: present						
Number of	credits: 5						
Recommend	ded semest	er/trimester	of the cours	se:			
Course leve	l: II., III.						
Prerequisiti	les:						
Conditions Active parti	for course cipation on	completion: seminars, acc	complishme	nt of bioinfor	matic tasks,	oral examina	ation
Learning ou Grasp of sp Gain experi	itcomes: ecialized b ences in wo	ioinformatic lorking with th	knowledge i e various da	n the field of tabases and c	f genetics of lata processin	the selected	organisms. s types.
Introduction databases de system, con dependent r DNA, RNA areas. Cloud of different	Introduction to the basic and advanced bioinformatic tools in the field of genetics. Work with the databases dedicated for the students specialized in biological disciplines. Basics of Linux operating system, command line approaches. Computational tools in the analysis of the PCR reaction dependent methods. Possibilities of sequencing and genotyping. Study of individual sequences of DNA, RNA and proteins. Presentation of biological data originating from the different "Omics" areas. Cloud analysis and NGS data. RNAseq data testing, asssembly, contigs mapping, analysis of different expression levels of genes.						
Recommended literature: Zvelebil, Baum: Understanding Bioinformatics. Taylor & Francis 2008. Fatima Cvrčková: Úvod do praktické bioinformatiky, ISBN: 80-200-1360-1, Academia, 2006. Neil C. Jones, Pavel A. Pevzner: An Introduction to Bioinformatics Algorithms, ISBN: 0262101068, MIT Press, 2004. Andreas D. Baxevanis, B. F. Francis Ouellette: Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins, ISBN: 0-471-47878-4, Wiley-Interscience, 2005.							
Course language: slovak, english							
Notes:							
Course assessment Total number of assessed students: 18							
A	В	C	D	E	FX	N	Р
38.89	11.11	5.56	5.56	11.11	0.0	0.0	27.78

Provides: RNDr. Miroslav Soták, PhD.

Date of last modification: 03.05.2015

Approved: prof. RNDr. Eva Čellárová, DrSc.

University: P. J. Šafá	University: P. J. Šafárik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ CM/04	Course name: Citation in monograph			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of credits: 2	20			
Recommended seme	ster/trimester of the course:			
Course level: III.				
Prerequisities:	Prerequisities:			
Conditions for course completion:				
Learning outcomes:				
Brief outline of the course:				
Recommended litera	Recommended literature:			
Course language:				
Notes:				
Course assessment Total number of asses	ssed students: 0			
Provides:				
Date of last modification:				
Approved: prof. RNDr. Eva Čellárová, DrSc.				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚBEV/ CZC/04	Durse ID: ÚBEV/ Course name: Citation in scientific journal published abroad ZC/04		
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1	0		
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of assessed students: 22			
	abs n		
100.0 0.0			
Provides:			
Date of last modification:			
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.		

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ CDC/04	V/ Course name: Citation in scientific journal published in the country of residence			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of credits: 5				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 5				
	abs n			
100.0 0.0				
Provides:	Provides:			
Date of last modification:				
Approved: prof. RNDr. Eva Čellárová, DrSc.				

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ SCI/04	Durse ID: ÚBEV/ Course name: Citation registered in Science Citation Index			
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present				
Number of credits: 2	20			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 35				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNDr. Eva Čellárová, DrSc.				

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	Faculty: Faculty of Science		
Course ID: ÚBEV/ DK/04	ourse ID: ÚBEV/ Course name: Conference in the country of residence K/04		
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2			
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of assessed students: 92			
	abs n		
100.0 0.0			
Provides:			
Date of last modification:			
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.		

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ SMPR/04	urse ID: ÚBEV/ IPR/04Course name: Co-worker of project supported by international grant schemes			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1	5			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 33				
	abs n			
	100.0 0.0			
Provides:	Provides:			
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ SDPR/04	Durse ID: ÚBEV/ Course name: Co-worker of project supported by national grant schemes DPR/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 296				
	abs n			
	100.0 0.0			
Provides:				
Date of last modification:				
Approved: prof. RNDr. Eva Čellárová, DrSc.				

University:	University: P. J. Šafárik University in Košice						
Faculty: Fa	culty of Scie	ence					
Course ID: CK1/03	Ourse ID: ÚBEV/ Course name: Cytogenetics and Karyology X1/03 Karyology						
Course type Course type Recomment Per week: Course me	e, scope and pe: Lecture / nded course 1 / 2 Per stu ethod: prese	I the method / Practice e-load (hours udy period: 1 nt	: 5): 14 / 28				
Number of	credits: 4						
Recommen	ded semeste	er/trimester	of the cours	e:			
Course leve	el: II., III.						
Prerequisit	ies:						
Conditions written tests protocols, oral examin	for course of s, ation	completion:					
Learning o To gain kno findings of comming fr	utcomes: wledge and cytogenetic rom human g	experience in s and molec genome mapp	n genetic pro uloar cytolo ping.	cesses at the gy. To get a	cell level usi cquainted in	ng the newe detail with	st scientific the results
Brief outlin Organisatio structure an Polythene of cell differen characterist	Brief outline of the course: Organisation of eukaryotic genome. Nuclear skeleton. Nucleolus, nucleolar skeleton. Chromatin structure and changes of chromatin. Levels of DNA organisation in cell nucleus. Chromosomes. Polythene chromosomes. Cell cycle. Genetic regulation of a cell cycle. Genetic regulation of cell differentiation. Apoptosis. Telomeres and function of telomerase. Molecular cytology. Basic characteristics of the Human genom project - what we can learn from it?						
Recommended literature: Russel, J.P.: Genetics, Third Edition, Harper Collins Publisher, New York 1992 Periodicals Internet sources							
Course language:							
Notes:							
Course assessment Total number of assessed students: 935							
А	A B C D E FX N P						Р
24.71	15.19	15.51	14.55	17.01	11.98	0.0	1.07
Provides: p	rof. RNDr. H	Eva Čellárová	i, DrSc., RN	Dr. Katarína	Bruňáková, I	PhD.	
Date of last	Date of last modification: 03.05.2015						

Approved: prof. RNDr. Eva Čellárová, DrSc.

University	P. J. Šafári	k University i	n Košice				
Faculty: Fa	aculty of Sc	ience					
Course ID: CTP1/01	Course ID: ÚBEV/ Course name: Cytopathology CTP1/01						
Course typ Course ty Recomme Per week: Course m	e, scope an pe: Lecture nded cours 2 Per stud ethod: pres	d the method se-load (hours ly period: 28 ent	: s):				
Number of	credits: 3						
Recommen	ded semes	ter/trimester	of the cours	e:			
Course lev	el: II., III.						
Prerequisit	ties:						
Conditions Oral exami	for course nation	completion:					
Learning o To provide	utcomes: the student	s with a know	ledge of basi	c biological	principles of	carcinogene	esis.
Brief outlin Tumor dev of cancer. genes. Met receptors. I	ne of the co elopment. T Apoptosis i astasis supp Proteinases	urse: Yumor growth a n tumor grow pressor genes. and their inhib	and metastati th and metas Angiogenes bitors in canc	c potential. C stasis. Onco is in cancer. er invasion.	Cell cycle reg genes and ca Cell surface Radio-, chen	ulation and p ncer. Tumor glycoprotei no- and imm	athogenesis suppressor ns and their unotherapy.
Recommended literature: Sherbet, G.V., Lakshmi, M. S.: The Genetics of Cancer. Genes Associated with Cancer Invasion, Metastasis and Cell Proliferation. Academic Press, London, 1997 Shebert, G. V.: The biology of tumor malignancy Academic Press London 1982							
Course lan	guage:						
Notes:							
Course assessment Total number of assessed students: 256							
А	В	C	D	Е	FX	Ν	Р
39.84	39.84 21.48 19.92 10.55 4.69 2.73 0.0 0.78						
Provides: prof. RNDr. Peter Fedoročko, CSc.							
Date of las	Date of last modification: 03.05.2015						
Approved:	prof. RND	r. Eva Čelláro	vá, DrSc.				

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
Course ID: ÚBEV/ ODZP/14	Course ID: ÚBEV/ Course name: Defence of Doctoral Thesis ODZP/14					
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 3	0					
Recommended seme	ster/trimester of the cours	e:				
Course level: III.						
Prerequisities:						
Conditions for cours	e completion:					
Learning outcomes:						
Brief outline of the c	ourse:					
Recommended litera	iture:					
Course language:						
Notes:						
Course assessment Total number of assessed students: 9						
N P						
0.0 100.0						
Provides:						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Eva Čellárová, DrSc.						

University: P. J. Šafá	University: P. J. Šafárik University in Košice					
Faculty: Faculty of S	cience					
Course ID: ÚBEV/ Course name: Doctoral exam DZS/14						
Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present						
Number of credits: 5						
Recommended seme	ster/trimester of the cours	2:				
Course level: III.						
Prerequisities: ÚBEV	V/VEK3/11					
Conditions for cours	e completion:					
Learning outcomes:						
Brief outline of the c	ourse:					
Recommended litera	iture:					
Course language:						
Notes:	Notes:					
Course assessment Total number of assessed students: 15						
N P						
0.0 100.0						
Provides:						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Eva Čellárová, DrSc.						

University: P. J	. Šafárik Univers	ity in Košice			
Faculty: Faculty	y of Science				
Course ID: CJF AJD1/07	Course ID: CJP/ Course name: English Language for PhD Students 1 AJD1/07				
Course type, sc Course type: I Recommended Per week: 2 Pe Course metho	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of crea	dits: 2				
Recommended	semester/trimes	ster of the cours	e:		
Course level: II	I				
Prerequisities:					
Conditions for	course completi	on:			
Learning outco	omes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessment Total number of assessed students: 425					
N	Ne	Р	Pr	abs	neabs
0.0 0.0 67.53 0.0 32.47 0.0					
Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD.					
Date of last modification: 03.05.2015					
Approved: prof	f. RNDr. Eva Čel	lárová, DrSc.			

University: P. J.	. Šafárik Univers	ity in Košice			
Faculty: Faculty	y of Science				
Course ID: CJF AJD2/07	se ID: CJP/ Course name: English Language for PhD Students 2				
Course type, sc Course type: F Recommended Per week: 2 Po Course metho	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 2 Per study period: 28 Course method: present				
Number of crea	lits: 3				
Recommended	semester/trimes	ster of the cours	e:		
Course level: II	I				
Prerequisities:					
Conditions for	course completi	on:			
Learning outco	mes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	ge:				
Notes:					
Course assessment Total number of assessed students: 421					
N	Ne	Р	Pr	abs	neabs
0.0 0.0 89.79 1.9 8.31 0.0					
Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD., Mgr. Barbara Mitríková					
Date of last modification: 03.05.2015					
Approved: prof. RNDr. Eva Čellárová, DrSc.					

Faculty: Faculty of Science						
racuity of Science						
Course ID: ÚBEV/ EMK/15Course name: Environmentálna mikrobiológia						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of credits: 5						
Recommended semester/trimester of the course:						
Course level: II., III.						
Prerequisities:						
Conditions for course completion: Attendance of practicals (at least 90%), final oral examination						
Learning outcomes: To provide students data on participation of microorganisms in biosphere processes, characteristics of most frequently occuring microbial communities and interactions of microorganisms with other organisms.						
Brief outline of the course: Evolution and biodiversity of microorganisms, microorganisms in environment, the influence of abiotic factors on microorganisms, biogeochemical cycles, interactions between microorganisms and other organisms						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 11						
A B C D E FX N P						
45.45 27.27 0.0 0.0 18.18 0.0 0.0 9.09						
Provides: doc. RNDr. Peter Pristaš, CSc.						
Date of last modification: 03.05.2015						
Date of last modification: 03.05.2015						

Faculty: Faculty of Science Course ID: ÚBEV/ FG/14 Course name: Functional genomics FG/14 Course type, scope and the method: Course type. Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present Recommended semester/trimester of the course: Number of credits: 5 Recommended semester/trimester of the course: Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Course will be understanding of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "geno-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics • Genome and functional genomics: • Genome sequencing, structural vs. functional genome annotation • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain proteome data, quantitative vs. qualitative proteomics, data analysis, data mining, protein networks • Metabolomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional genomics • A real-case applications of the functional genomics	University: P. J. Šafárik University in Košice							
Course ID: ÚBEV/ FG/14 Course name: Functional genomics Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present Number of credits: 5 Recommended semester/trimester of the course: Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: Introduction to functional genomics • Introduction to functional genomics Genome-wide mutants and their use in functional genomics • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain transcriptome data, data analysis, data mining • Proteomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining, protein networks • Metabolomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining	Faculty: Faculty of Science							
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present Number of credits: 5 Recommended semester/trimester of the course: Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: sequenced model organisms, conceptual and methodological input of genome sequencing, structural vs. functional genome-annotation • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain transcriptome data, data analysis, data mining • Proteomics: methods to obtain proteome data, quantitative vs. qualitative proteom	Course ID: ÚBEV/ FG/14	Course name: Functional genomics						
Number of credits: 5 Recommended semester/trimester of the course: Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain proteome data, quantitative vs. qualitative proteomics, data analysis, data mining • Proteomics: methods to obtain proteome data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional genomics • Metabolomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biolog	Course type, scope a Course type: Lectur Recommended cour Per week: 2 / 2 Per Course method: pre	nd the method: re / Practice rse-load (hours): study period: 28 / 28 esent						
Recommended semester/trimester of the course: Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: • Genome and functional genomics: • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain proteome data, quantitative vs. qualitative proteomics, data analysis, data mining. • Proteomics: methods to obtain proteome data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional genomics • Biological databases and other resources for functional genome analysis • A real-case applications of the function	Number of credits: 5							
Course level: II., III. Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain transcriptome data, data analysis, data mining • Proteomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Metabolomics; methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional genomics • A real-case applications of the functional genomics • A real-case proverPoint Presentation Course language	Recommended seme	ster/trimester of the course:						
Prerequisities: Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: • Genome and functional genomics: • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: • Transcriptomics: • Transcriptomics: • Proteomics: • Proteomics: • Obtain proteome data, quantitative vs. qualitative proteomics, data analysis, data mining • Proteomics: • Metabolomics: • Metabolomics; methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional ge	Course level: II., III.							
Conditions for course completion: Active participation in practical and theoretical courses Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: • Introduction to functional genomics: • Genome and functional genomics: • Genome and functional genomics: • Genome sequencing, structural vs. functional genome-annotation • Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics • Transcriptomics: methods to obtain transcriptome data, data analysis, data mining • Proteomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining • Biological databases and other resources for functional genome analysis • A real-case applications of the functional genomics Recommended literature: Internet sources, PowerPoint Presentation	Prerequisities:							
 Learning outcomes: Functional genomics attempts to answer questions about the function of DNA at the levels of genes, RNA transcripts, and proteins. A key characteristic of functional genomics studies is their genome-wide approach to these questions, generally involving high-throughput methods rather than a more traditional "gene-by-gene" approach. The outcome of this course will be understanding of the approaches and methods used in functional genomics and their application in research as well as in practice. Brief outline of the course: Introduction to functional genomics: sequenced model organisms, conceptual and methodological input of genome sequencing, structural vs. functional genome annotation Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics Transcriptomics: methods to obtain transcriptome data, data analysis, data mining Proteomics: methods to obtain proteome data, quantitative vs. qualitative metabolomics, data analysis, data mining Metabolomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining Biological databases and other resources for functional genome analysis A real-case applications of the functional genomics Recommended literature: Internet sources, PowerPoint Presentation Course language: 	Conditions for cours Active participation i	e completion: n practical and theoretical courses						
 Brief outline of the course: Introduction to functional genomics Genome and functional genomics: sequenced model organisms, conceptual and methodological input of genome sequencing, structural vs. functional genome annotation Genome-wide reverse genetics: techniques to create collections of genome-wide mutants and their use in functional genomics Transcriptomics: methods to obtain transcriptome data, data analysis, data mining Proteomics: methods to obtain proteome data, quantitative vs. qualitative proteomics, data analysis, data mining, protein networks Metabolomics: methods to obtain metabolomic data, quantitative vs. qualitative metabolomics, data analysis, data mining Biological databases and other resources for functional genome analysis A real-case applications of the functional genomics Recommended literature: Internet sources, PowerPoint Presentation	Learning outcomes: Functional genomics genes, RNA transcrip genome-wide approad a more traditional "go the approaches and m as in practice.	attempts to answer questions about the function of DNA at the levels of ots, and proteins. A key characteristic of functional genomics studies is their ch to these questions, generally involving high-throughput methods rather than ene-by-gene" approach. The outcome of this course will be understanding of nethods used in functional genomics and their application in research as well						
Recommended literature: Internet sources, PowerPoint Presentation Course language:	Brief outline of the c Introduction to funct Genome and function input of genome seque Genome-wide rever use in functional gene Transcriptomics: methon analysis, data mining Metabolomics: methon data analysis, data mining Biological database A real-case applicat	ourse: etional genomics onal genomics: sequenced model organisms, conceptual and methodological genering, structural vs. functional genome annotation se genetics: techniques to create collections of genome-wide mutants and their omics ethods to obtain transcriptome data, data analysis, data mining eds to obtain proteome data, quantitative vs. qualitative proteomics, data , protein networks hods to obtain metabolomic data, quantitative vs. qualitative metabolomics, ning s and other resources for functional genome analysis ions of the functional genomics						
Course language:	Recommended literature:							
Course language:	Internet sources, Pow	rerPoint Presentation						
English	Course language: English							
Notes:	Notes:							

Course assessment Total number of assessed students: 35								
А	A B C D E FX N P							
22.86	22.86 28.57 22.86 5.71 5.71 5.71 0.0 8.57							
Provides: F	Provides: RNDr. Eva Vranová, PhD.							
Date of last modification: 03.05.2015								
Approved: prof. RNDr. Eva Čellárová, DrSc.								

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
Course ID: ÚBEV/ Course name: Gene Manipulations GM1/03						
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 2 Per study period: 28 / 28 Course method: present						
Number of credits: 6						
Recommended semester/trimester of the course:						
Course level: II., III.						
Prerequisities: ÚBEV/UGM1/03						
Conditions for course completion:						
Learning outcomes:						
Brief outline of the course:						
Recommended literature:						
Course language:						
Notes:						
Course assessment Total number of assessed students: 118						
A B C D E FX N P						
51.69 22.88 6.78 2.54 2.54 0.85 0.0 12.71						
Provides: doc. RNDr. Peter Pristaš, CSc.						
Date of last modification: 03.05.2015						
Approved: prof. RNDr. Eva Čellárová, DrSc.						

University: P. J. Šafárik University in Košice							
Faculty: Fa	culty of S	cience					
Course ID: GC1/01	Course ID: ÚBEV/ Course name: Human Genetics GC1/01						
Course typ Course ty Recomme Per week: Course me	e, scope a pe: Lectur nded cour 2 / 1 Per ethod: pre	nd the method re / Practice rse-load (hours study period: 2 esent	: 5): 28 / 14				
Number of	credits: 5						
Recommen	ded seme	ster/trimester	of the cours	e:			
Course leve	el: II., III.						
Prerequisit	ies:						
Conditions	for cours	e completion:					
Learning o To provide processes,	utcomes: students v with the in	vith a basics of heritance, diag	human gener	tics, with the reatment of g	role of gene genetic disord	tic factors in lers.	n pathologic
Brief outlin The geneti population used in hur and karyoty	e of the c c basics of genetics; nan genet: ping, the	ourse: of physiologica the patterns of ics - genealogy, DNA diagnosis	l variability inheritance a linkage ana of patholog	and pathol nd pedigree lysis and the ical traits; th	ogical traits problem sol gene mappin e treatment o	of individu ving; the bas ng, cytogene f genetic dis	als; human sic methods etic analysis orders.
Recommended literature: Thompson JS, Thompson MW (2001): Genetics in Medicine 6/e. W.B.Sounders Company, Philadelphia, Pennsylvania, USA Friedman JM, Dill FJ, Hayden MR, McGillivray BC (1996): Genetics 2/e. Williams & Wilkins, Baltimore, Marvland, USA							
Course lan	Course language:						
Notes:	Notes:						
Course assessment Total number of assessed students: 842							
А	В	C	D	Е	FX	Ν	Р
25.06	25.06 14.85 16.63 14.01 16.27 12.47 0.0 0.71						
Provides: RNDr. Katarína Bruňáková, PhD.							
Date of last	modifica	tion: 03.05.201	5				
Approved:	prof. RNI	Dr. Eva Čellárov	vá, DrSc.				

University: P. J. Šafá	rik University in Košice					
Faculty: Faculty of S	Faculty: Faculty of Science					
Course ID: ÚBEV/ NEM/04	Course ID: ÚBEV/ Course name: Implementation of new experimental methodology NEM/04					
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present					
Number of credits: 1	5					
Recommended seme	ster/trimester of the cours	e:				
Course level: III.						
Prerequisities:						
Conditions for cours	e completion:					
Learning outcomes:						
Brief outline of the c	ourse:					
Recommended litera	iture:					
Course language:						
Notes:						
Course assessment Total number of assessed students: 61						
abs n						
100.0 0.0						
Provides:						
Date of last modification:						
Approved: prof. RNDr. Eva Čellárová, DrSc.						

University: P. J. Šafá	rik University in Košice		
Faculty: Faculty of S	cience		
Course ID: ÚBEV/ MK/04	Course name: Internationa	al Conference	
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent		
Number of credits: 6)		
Recommended seme	ster/trimester of the cours	e:	
Course level: III.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
Notes:			
Course assessment Total number of asses	ssed students: 139		
	abs	n	
	100.0	0.0	
Provides:			
Date of last modifica	ition:		
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.		

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ DKZU/04	Course name: Internationa residence	al conference taking place in the country of
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent	
Number of credits: 4		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 86	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	ition:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ ZNC/04	Course name: Journals no database and published abr	t registered in the Current Contents Connect oad
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent	
Number of credits: 5		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 40	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ DNC/04	Course name: Journals no database and published in t	t registered in the Current Contents Connect he country of residence
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent	
Number of credits: 5		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 33	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ ZKC/04	Course name: Journals reg and published abroad	gistered in the Current Contents Connect database
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent	
Number of credits: 2	20	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 176	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ DKC/04	Course name: Journals reg and published in the countr	gistered in the Current Contents Connect database by of residence
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent	
Number of credits: 1	5	
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 12	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University:	P. J. Šafári	k University i	n Košice				
Faculty: Fa	culty of Sci	ence					
Course ID: MOG/03	ÚBEV/	Course name	: Model Orga	anisms in Ge	netics		
Course typ Course typ Recomme Per week: Course mo	e, scope an pe: Lecture nded cours 2 / 2 Per st ethod: pres	d the method / Practice e-load (hours tudy period: ent	l: s): 28 / 28				
Number of	credits: 5						
Recommen	ded semest	ter/trimester	of the cours	e:			
Course leve	el: II., III.						
Prerequisit	ies:						
Conditions protocols, participatio oral examir	for course n at a mini nation	completion: conference: N	Iodel organis	sm for my di	ploma thesis	,	
Learning o To provide organisms u	utcomes: the studen used in gene	ts with an in etic research.	formation of	n model sys	tems of prol	karyotic and	eukaryotic
Brief outlin Basic prope coli, Diplos of simple e model syste Drosophila plants and databases.	ne of the co erties of me coccus pner ukaryotic o ems in vitro melanogast animals. H	urse: odel organism umoniae, Agr rganisms (Sac and in vivo. ter. Morgan's eLa cells. Ste	ns used in ge obacterium t ccharomyces Caenorhabdi rules. Danio em cells. Get	enetics. Prok cumefaciens cerevisiae, N tis elegans. A rerio. Mus m netic importa	aryotic mod and A. rhizo Neurospora c Arabidopsis t usculus. Hur ance of the s	el systems (ogenes). Mo rassa). Plant haliana. Men nan genome. study of twi	Escherichia del systems and animal ndel's laws. Transgenic ins. Genetic
Recommen Snustad, P.I str., Genetic per Internet sou	ded literat D., Simmor iodicals, irces	ure: as, M.J.: Gene	tika. Naklada	atelství Masa	nrykovy univ	erzity, Brno,	2009, 871
Course lang	guage:						
Notes:							
Course asso Total numb	essment er of assess	ed students: 9	019				
А	В	С	D	Е	FX	Ν	Р
23.07	16.87	15.56	13.49	17.63	12.3	0.0	1.09

Provides: RNDr. Eva Vranová, PhD., RNDr. Miroslav Soták, PhD., RNDr. Andrea Kucharíková, PhD., RNDr. Katarína Nigutová, PhD., prof. RNDr. Eva Čellárová, DrSc.

Date of last modification: 03.05.2015

Approved: prof. RNDr. Eva Čellárová, DrSc.

University:	P. J. Šafár	ik University i	n Košice				
Faculty: Fa	culty of So	cience					
Course ID: MZO1/03	ÚBEV/	Course name	: Molecular b	oasis of onto	genetic devel	lopment	
Course typ Course tyj Recomme Per week: Course mo	e, scope an pe: Lectur nded cour 2 Per stud ethod: pre	nd the method e se-load (hours ly period: 28 sent	: s):				
Number of	credits: 3						
Recommen	ded semes	ster/trimester	of the cours	e:			
Course leve	el: II., III.						
Prerequisit	ies:						
Conditions Oral exami	for coursenation.	e completion:					
Learning o Acquiring o developmen	utcomes: of basic kn nt of anima	owledge of pr al and plant org	inciples and ganisms.	molecular-b	iological med	chanisms of	ontogenetic
Regulation development specialised of eukaryot body plan. organisms.	of the ont nt. Cell do cell types. ic genes. F Establishr	ogenetic devel etermination a Epigenetic med Regulatory gene nent of the ma	opment in eu nd different chanisms of c es. Establishr ain axis of b	akaryotic org ation. Mole cellular mem nent of cell body. Shape	ganisms. Progecular mecha ory. Imprintin position. Forr formation. C	gram of the misms of fo ng. Combina mation of the Cloning of n	ontogenetic ormation of tory control e embryonic nulticellular
Recommen Gerhard,J., Massachuse	ded litera Kirschener ett,Oxford,	ture: ;M.: Cells, Em London,1997	bryos and Ev	volution. Bla	acwell Scienc	e Inc.,	
Course lan	guage:						
Notes:							
Course asse Total numb	essment er of asses	sed students: 2	.98				
А	В	C	D	Е	FX	Ν	Р
37.25	22.82	11.74	14.09	8.72	4.03	0.0	1.34
Provides: p	rof. RNDr	Eva Mišúrová	á, CSc.		·		
Date of last	modifica	tion: 03.05.20	15				
Approved:	prof. RNE	r. Eva Čelláro	vá, DrSc.				

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ NZ/04	Course name: Non-review published abroad or in the	ved collections of papers and monographs country of residence
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): ly period: esent	
Number of credits: 2		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 80	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
Course ID: ÚBEV/ RZ/04	Course name: Peer-review published abroad or in in the second s	ved collections of papers and monographs ne country of residence
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	nd the method: rse-load (hours): y period: esent	
Number of credits: 5		
Recommended seme	ster/trimester of the cours	e:
Course level: III.		
Prerequisities:		
Conditions for cours	e completion:	
Learning outcomes:		
Brief outline of the c	ourse:	
Recommended litera	iture:	
Course language:		
Notes:		
Course assessment Total number of asses	ssed students: 177	
	abs	n
	100.0	0.0
Provides:		
Date of last modifica	tion:	
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.	

University: P. J. Šafárik University in Košice
Faculty: Faculty of Science
Course ID: ÚBEV/ BTR1/06Course name: Plant Biotechnology
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 3 Per study period: 28 / 42 Course method: present
Number of credits: 6
Recommended semester/trimester of the course:
Course level: I., II., III.
Prerequisities:
Conditions for course completion: written test, protocols, oral examination
Learning outcomes: To gain theoretical and practical knowledge on plant tissue culture in vitro.
Brief outline of the course: Genetics and physiology of plant cell and tissue culture, protoplasts, embryoids and organs cultured in vitro under sterile conditions. Use of tissue culture in research and praxis. Cryopreservation of plant cells and tissues. Immobilised plant systems. Genetic transformation of plants and expression of foreign genes.
Recommended literature: Slater A. et al.: Plant Biotechnology. Oxford University Press 2008, 376 pp. Wink M. (Ed.): An Introduction to Molecular Biotechnology. Willey-Blackwell, 2011, 601 pp. Periodicals and Internet sources
Course language:
Notes:
Course assessment Total number of assessed students: 110
A B C D E FX N P
37.27 17.27 17.27 6.36 11.82 4.55 0.0 5.45
Provides: prof. RNDr. Eva Čellárová, DrSc., RNDr. Katarína Nigutová, PhD., RNDr. Eva Vranová, PhD.
Date of last modification: 03.05.2015
Approved: prof. RNDr. Eva Čellárová, DrSc.

Faculty: Faculty of Science Course ID: ÚBEV/ Course name: Population Genetics GEP/12 Course name: Population Genetics Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present Vumber of credits: 4 Recommended semester/trimester of the course: Course level: II., III. 'rerequisities: Course is a course cou
Course ID: ÚBEV/ Course name: Population Genetics GEP/12 Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present Number of credits: 4 Kecommended semester/trimester of the course: Course level: II., III. 'rerequisities:
Course type, scope and the method: Course type: Lecture / Practice Recommended course-load (hours): Per week: 2 / 1 Per study period: 28 / 14 Course method: present Number of credits: 4 Recommended semester/trimester of the course: Course level: II., III. 'rerequisities:
Number of credits: 4 Recommended semester/trimester of the course: Course level: II., III. Prerequisities:
Recommended semester/trimester of the course: Course level: II., III. Prerequisities:
Course level: II., III. Prerequisities:
Prerequisities:
C onditions for course completion: Exam.
Acquire knowledge about genetic interactions in population. Describe the theoretical and historical ground of population genetics. Identify, characterize and compare fundamental mechanisms (mutation, selection, migration, genetic drift). Interactions leading to intra- and interpopulation variability in population structure. Genetic diversity analysis.
Brief outline of the course:
Recommended literature: HALLIBURTON. R. (2004): Introduction to Population Genetics. Pearson Prentice Hall. HARTL, D. L. and CLARK, A. G. (2007): Principles of Population Genetics. 4th ed. Sinauer. RELICHOVÁ, J. (2001): Genetika populací. Masarykova univerzita Brno. Hedrick, P.W.: Genetics of Populations. Jones and Bartlett Publishers 2000.
Course language:
lotes:
Course assessment Fotal number of assessed students: 680
A B C D E FX N P
17.35 14.85 14.85 16.47 20.44 15.0 0.0 1.03
Provides: RNDr. Miroslav Soták, PhD.
Date of last modification: 03.05.2015
nnrovod nrof PNDr Eva Čallárová DrSa

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ ZSP/04	Durse ID: ÚBEV/ Course name: Realisation of study/research stay abroad SP/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e: 6., 8.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 71				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ IG/04	Ourse ID: ÚBEV/ Course name: Receiving a grant under Internal Scientific Grant System 4/04 (VVGS)			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1	0			
Recommended seme	ster/trimester of the cours	e: 6., 8.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 122				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Dr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ VPBB/11	Course name: Review of a	a Bachelor Thesis		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 12				
abs n				
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ SSOL/04	urse ID: ÚBEV/ Course name: Samostatné štúdium odbornej literatúry OL/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 196				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafári	k University in Košice			
Faculty: Faculty of Sci	ence			
Course ID: Dek. PF UPJŠ/JSD/14	ourse ID: Dek. PF Course name: Spring School for PhD Students PJŠ/JSD/14			
Course type, scope an Course type: Lecture Recommended cours Per week: Per study Course method: prese	Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 4d Course method: present			
Number of credits: 2				
Recommended semest	er/trimester of the cour	se:		
Course level: III.				
Prerequisities:				
Conditions for course	completion:			
Learning outcomes:				
Brief outline of the co	urse:			
Recommended literat	ure:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 68				
6	abs n			
10	100.0 0.0			
Provides: doc. RNDr. Vladimír Zeleňák, PhD.				
Date of last modification: 03.05.2015				
Approved: prof. RND	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚCHV/ VBP/04	Course name: Supervision	of Bachelor Thesis		
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 6				
Recommended seme	ster/trimester of the cours	e: 6., 8.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 227				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ VPSV/04	Parse ID: ÚBEV/ Course name: Supervision of Student's Scientific Activity PSV/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 6)			
Recommended seme	ster/trimester of the cours	e: 6., 8.		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 10				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	Faculty: Faculty of Science			
Course ID: ÚBEV/ VYS/04	ourse ID: ÚBEV/ Course name: Talk given at scholar seminars of department or institute YS/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 158				
abs n				
	100.0 0.0			
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ PPC/04	urse ID: ÚBEV/ Course name: Teaching activities C/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1				
Recommended seme	ster/trimester of the cours	e:		
Course level: 111.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 325				
abs n				
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ PPC/04	urse ID: ÚBEV/ Course name: Teaching activities C/04			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1				
Recommended seme	ster/trimester of the cours	e:		
Course level: 111.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 325				
abs n				
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ POVK/04	ourse ID: ÚBEV/ Course name: Work in Organizing Committee of Conference			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 2				
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 26				
	abs n			
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			

University: P. J. Šafá	rik University in Košice			
Faculty: Faculty of S	cience			
Course ID: ÚBEV/ PDS/14	urse ID: ÚBEV/ Course name: Writing Dissertation Work			
Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre	Course type, scope and the method: Course type: Recommended course-load (hours): Per week: Per study period: Course method: present			
Number of credits: 1	5			
Recommended seme	ster/trimester of the cours	e:		
Course level: III.				
Prerequisities:				
Conditions for cours	e completion:			
Learning outcomes:				
Brief outline of the c	ourse:			
Recommended litera	iture:			
Course language:				
Notes:				
Course assessment Total number of assessed students: 14				
abs n				
100.0 0.0				
Provides:				
Date of last modification:				
Approved: prof. RNI	Approved: prof. RNDr. Eva Čellárová, DrSc.			