COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ IG/04	**Course name:** Acquirement of Internal Grant
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment

Total number of assessed students: 144

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ PKLB/13	**Course name:** Advances in Clinical Biochemistry

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: 8

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:
Oral examination

Learning outcomes:
Familiarize postgraduate students with newest knowledge from medicinal biochemistry and pathobiochemistry.

Brief outline of the course:
Molecular basis of medicinal biochemistry (urine, kidney, pancreas, gland, heart, blood circulation, lungs and bronchi, liver and bile duct) and its application into practice.

Recommended literature:
Rosenthal, M.D., Glew, R.H.: Medical biochemistry – human metabolism in health and disease, Wiley and Sons, 2009.

Course language:

Notes:

Course assessment
Total number of assessed students: 2

N	P
0.0	100.0

Provides: doc. RNDr. Mária Kožurková, CSc.

Date of last modification: 03.05.2015

Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ BINF/06	**Course name:** Bioinformatics
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 12

N	P
0.0	100.0

Provides: doc. RNDr. Peter Pristaš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ CZC/04	**Course name:** Citation in the International Scientific Journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 15

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ CDC/04	**Course name:** Citation in the Local Scientific Journal
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 0	

abs	n
0.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ CM/04	**Course name:** Citation in the Monograph
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 2	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ KSB/13	**Course name:** Conformational Stability of Proteins
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 8	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion: Examination	
Learning outcomes: Student should attain extended knowledge in the field of conformation properties of proteins, folding and biosynthesis of proteins, formation and characteristics of missfodled and agregated proteins, new techniques in study of proteins: solvent engineering, display/evolution technologies.	
Brief outline of the course: 1. Chemical properties of polypeptides (the polymeric nature of proteins, amino acid residues, the polypeptide backbone..). 2. Protein structure determination methods. Physical interaction that determine the properties of proteins, conformational properties of polypeptide chains. Biosynthesis of proteins. 3. Proteins in solution and in membrane (folded state, missfolded states and denatured states of globular proteins..) – stability of the folded conformations of proteins, flexibility and dynamics of protein structure. Misfolded and aggregated states of proteins. 4. Protein stability – thermodynamic and kinetic stability. Methods for determination of protein stability. Modification of protein stability: solvent engineering, display/evolution technologies.	
Recommended literature: 1. David L. Nelson, Michael M. Fox, Lenhinger principles of biochemistry, W.H.Freeman, New York, 2004. 2. J.M. Berg, J.L. Tymoczko, L. Stryer, Biochemistry, W.H.Freeman, New York, 2007. 3. Thomas E. Creighton, Proteins, Structure and Molecular Properties (2nd Ed.), W.H.Freeman; New York, 1993. 4. Articles from Scientific Journals.	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 3

N	P
0.0	100.0

Provides: prof. Ing. Marián Antalík, DrSc., doc. RNDr. Erik Sedlák, PhD., RNDr. Nataša Tomášková, PhD.

Date of last modification: 03.05.2015

Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SDPR/04	**Course name:** Co-worker of a Local Project
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 252

abs	n
99.6	0.4

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SMPR/04	**Course name:** Co-worker of an International Project
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 24

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ PPC/04	**Course name:** Direct Pedagogical Activities
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 263	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ PPC/04	**Course name:** Direct Pedagogical Activities
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 263	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DZS/15	**Course name:** Doctoral Exam
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 4

N	P
0.0	100.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ AJD1/07	**Course name:** English Language for PhD Students 1

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 credits: 2

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 425

N	Ne	P	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. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ AJD2/07	**Course name:** English Language for PhD Students 2

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 credits: 3

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:

Learning outcomes:

Brief outline of the course:

Recommended literature:

Course language:

Notes:

Course assessment
Total number of assessed students: 421

N	Ne	P	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. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ GI/06	**Course name:** Genetic Engineering
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 12

N	P
0.0	100.0

Provides: doc. RNDr. Peter Pristaš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/SSOL/04	**Course name:** Individual Study of Scientific Literature
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 159

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ MK/04	**Course name:** International Conference
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 146

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ ZKC/04	**Course name:** International Currented Journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 179

abs	n
99.44	0.56

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ ZNC/04	**Course name:** International Non-Currented Jounal
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 14	

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ NEM/04	**Course name:** Introduction of a New Experimental Method
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 7

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/DK/04	**Course name:** Local Conference
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 66

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DKZU/04	**Course name:** Local Conference with Foreign Participation
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 142

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DKC/04	**Course name:** Local Currented Journal
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 9

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ DNC/04	**Course name:** Local Non-Currented Journal
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 14

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ POVK/04	**Course name:** Membership in a Conference organizing Committee
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 26

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ MPEP/06	**Course name:** Methodology of Experimental Work
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 4	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 10

abs	n
100.0	0.0

Provides: doc. RNDr. Peter Javorský, DrSc., doc. RNDr. Peter Pristaš, CSc., doc. RNDr. Mária Kožurková, CSc., prof. Ing. Marián Antalík, DrSc., doc. RNDr. Viktor Víglaský, PhD., doc. RNDr. Erik Sedlák, PhD.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ MTB/13	**Course name:** Modern Trends in Biotechnology
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 3 / 1 **Per study period:** 42 / 14 **Course method:** present	
Number of credits: 6	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion: Examination	
Learning outcomes: To acquaint students with the latest knowledge and trends in biotechnology.	
Brief outline of the course: Methods, disciplines and the use of biotechnology. The material base for biotechnology. Genetic engineering, cloning, artificial insemination and conventional techniques of plant biotechnology. Biomass - Biotechnology substrate. Biogas. Fermentation processes, cultivation equipment, types of fermenters and mixers. Food Biotechnology: alcoholic fermentation, production of spirits, beer and wine. Production of dairy products, amino acids and vitamins. Manufacture of organic solvents: acetone, butanol, ethanol. Biotechnology in medicine. Production of antibiotics, vaccines and proteins for therapeutic purposes. Wastewater treatment: biological filters, membrane bioreactors, sludge disposal, removal of solid impurities and water disinfection.	
Recommended literature: 1. Y.H. Hui, Ph.D, Wai-Kit Nip, Leo M.L. Nollet, PhD, Gopinadhan Paliyath, Ph.D., Benjamin K. Simpson, Food Biochemistry and Food Processing, Wiley-Blackwell, 2006. 2. E. M. T. El-Mansi, C. F. A. Bryce, Arnold L. Demain, A.R. Allman, Fermentation Microbiology and Biotechnology, Second Edition, CRS Press, 2006. 3. Principles of Fermentation Technology, Second Edition, P F Stanbury, S. Hall, A. Whitaker, Elsevier Science Ltd., 1999. 4. J. G. Black, Microbiology (seventh edition), John Wiley & Sons, Inc. 2008. 5. J. E. Smith, Biotechnology (fifth edition), UK, University Press, Cambridge, 2009. 6. W. Bains, Biotechnology from A-Z (third edition), Oxford university Press, 2004.	
Course language:	
Notes:	

Course assessment Total number of assessed students: 0	
N	P
0.0	0.0
Provides: RNDr. Danica Sabolová, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. Ing. Marián Antalík, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/NZ/04	**Course name:** Not-Reviewed International or Local Proceedings
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 132

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ NKSF/13	**Course name:** Nucleic Acids: Structure and Function

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 3 / 1 **Per study period:** 42 / 14
Course method: present

Number of credits: 6

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
The main objective of the course is to provide studenst of PhD degree the newest trends in the field of molecular biology and biochemistry focused on nucleic acids.

Brief outline of the course:
The lead-in of the molecular genetics and biology problems, the implication of the nucleic acids for processes occurring in cells. Dividing the nucleic acids according to their chemical compound and their function, localization in the cell organelles, DNA and RNA structure, DNA topology, the chromatine structure, the histons function, dividing of the small RNA molecules and their catalytic function. Transcription in eukaryotických and prokaryotic cells: promoters, enhancers, silencers, transcription factors, initiation, post-transcription modification, processing of precursor RNA: covalent modification, hnRNA, polyadenylation, cap creation, splicing and RNA editing, transcription regulation, negative-positive, anti-termination, attenuation, cis- and trans-regulating elements, iRNA. Translation of the eukaryotic and prokaryotic genomes: iniciation, elongation, termination, post-translating modification, regulating mechanisms, protein folding, in vitro translating systems. Replication: iniciation, ori/ARS, the replicant factor processing mechanisms, PCR and its variations. The nucleic acids metabolism, syntheses and degradation of the purine and pyrimidin bases, gout. Mutations: the hereditary illnesses, the infulence of the outer and the initial factors to the mutagenesis induction, definition of the oncogenes and the tumor suppressing genes. Viruses: genome, morphology, function. Carcinogenesis and gene therapy. The Outlook for a successful cancer treatment. The cons and pros of the known therapeutic methods.

Recommended literature:
1. B. Alberts, A. Johnson, J. Lewis , M. Raff , K. Roberts , P.: Walter Molecular Biology of the Cell, Garland Science, Fifth edition, New York, NY, 2008.
2. Neidle S.: Cancer Drug Design and Discovery, Academic Press, First edition, 2007.
3. Krauss G.: Biochemistry of Signal Transduction and Regulation, Wiley-VCH Verlag GmbH, Second Edition, 2003.

Course language:

Notes:	
Course assessment Total number of assessed students: 4	
N	P
0.0	100.0
Provides: doc. RNDr. Viktor Víglaský, PhD.	
Date of last modification: 03.05.2015	
Approved: prof. Ing. Marián Antalík, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ ODZP/2014/15	**Course name:** Obhajoba dizertačnej práce
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 30	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 12

N	P
0.0	100.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ PVS/04	**Course name:** Patents, Inventions, 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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 0	

abs	n
0.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ FBB/06	**Course name:** Physiology and Biochemistry of Rumen Microorganisms
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 8

N	P
0.0	100.0

Provides: doc. RNDr. Peter Javorský, DrSc., doc. RNDr. Peter Pristaš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VYS/04	**Course name:** Presentation in Seminar
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 144

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ VIM/13	**Course name:** Research of Individual Molecules

Course type, scope and the method:
Course type: Lecture / Practice
Recommended course-load (hours):
Per week: 4 / 2 **Per study period:** 56 / 28
Course method: present

Number of credits: 8

Recommended semester/trimester of the course:

Course level: III.

Prerequisities:

Conditions for course completion:
Examination

Learning outcomes:
In biological systems, many biopolymers present in small amounts, even as individual molecules. Recently, new methods have been developed to study such systems. The lectures will be given to work regularities of such systems, as well as biochemical and biophysical research methods of individual molecules.

Brief outline of the course:
Biomacromolecules, cells in terms of their individual characteristics. Basic knowledge about the function of lasers and other devices (eg XFEL), suitable for the study of biomacromolecules. GFP protein, dyes - fluorescent probes, nano and microparticles. Atomic force microscopy - AFM, MSM. Microchip electrophoresis and microhydrodynamic devices (MEMS, Lab on a Chip). Super resolution microscopy, two-photon processes, and more. TERS, SERS, Fano resonance. SNOM, fluorescence correlation spectroscopy. GSDM, STED. Storm, FRET, TIRF. Manipulation of individual molecules, cells. Optical tweezers, magnetic tweezers, optical crystals with cavity. Electron microscopy (SEM, TEM), X-ray microscopy. Study of membrane processes, Patch clamp. The electrical conductivity of the molecules, graphene, carbon nanotubes.

Recommended literature:
1. Christoph Zander, Jörg Enderlein, Richard A. Keller Single molecule detection in solution: methods and applications Wiley, 2002.
2. Chris Gell, David Brockwell, D. Alastair Smith, Handbook of single molecule fluorescence spectroscopy, Oxford University Press, 2006.
3. Experimental oriented journal articles:
/ Keir C Neuman & Attila Nagy Single-molecule force spectroscopy: optical tweezers, magnetic tweezers and atomic force microscopy Nature Methods - 5, 491 - 505 (2008)
/ Chirlmin Joo, Hamza Balci, Yuji Ishitsuka,1 Chittanon Buranachai, and Taekjip Ha, Advances in Single-Molecule Fluorescence Methods for Molecular Biology, Annual Review of Biochemistry 77, 51-76 (2008).

Course language:

Notes:	
Course assessment Total number of assessed students: 0	
N	P
0.0	0.0
Provides: prof. Ing. Marián Antalík, DrSc.	
Date of last modification: 03.05.2015	
Approved: prof. Ing. Marián Antalík, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ RZ/04	**Course name:** Reviewed International or Local Proceedings
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 186

abs	n
100.0	0.0

Provides:
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VPBP/04	**Course name:** Review of a Bachelor Thesis
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 44	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ SCI/04	**Course name:** SCI Citation
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 20	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 78	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VKB/06	**Course name:** Selected Topics in Biochemistry
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 33

N	P
0.0	100.0

Provides: prof. Ing. Marián Antalík, DrSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VKBMB/04	**Course name:** Selected Topics in Biochemistry and Molecular Biology
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: 8	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 33

N	P
0.0	100.0

Provides: doc. RNDr. Peter Javorský, DrSc., doc. RNDr. Peter Pristaš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VKBM/13	**Course name:** Selected Topics in Biochemistry of Microorganisms
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 8	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion: Examination	
Learning outcomes: Familiarize postgraduate students with newest knowledge from Biochemistry of microorganism.	
Brief outline of the course: Diversity of microbial world – microbial evolution, taxonomy and diversity. Ecology and symbiosis – Biogeochemical cycling and introductory microbial ecology, microbial interactions. Antimicrobial chemotherapy – development of chemotherapy, general characteristics of antimicrobial drugs, determining the level of antimicrobial activity, antibacterial drugs, factor influencing antimicrobial drug effectiveness, drug resistance, antifungal, antiviral and antiprotozoal drugs. Food and industrial microbiology – microbiology of food, microorganism growth in foods, microbial and food spoilage, controlling food spoilage, food-borne pathogens. Applied and industrial microbiology – microorganisms used in industrial microbiology, major products of industrial microbiology.	
Recommended literature: 1. Black, J. G.: Microbiology, Wiley & Sons, Inc., 2008. 2. Johnson, T. R., Case, J.: Laboratory Experiments in Microbiology, 9th Ed., Pearson, 2010. 3. Kayser, F. H., Bienz, K. A., Eckert, J., Zinkernagel, R. M.: Medical Microbiology, Thieme, Stitgart-New York, 2001. 4. Levinson, W.: Review of Medical Microbiology and Immunology, McGraw-Hill International Edition, 2010. 5. Willey, J. M., Sherwood, L. M., Woolverton, C. J.: Prescott, Harley, and Klein´s Microbiology, McGraw-Hill International Edition, 2008.	
Course language:	
Notes:	

Course assessment Total number of assessed students: 2	
N	P
0.0	100.0
Provides: doc. RNDr. Mária Kožurková, CSc.	
Date of last modification: 03.05.2015	
Approved: prof. Ing. Marián Antalík, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VKI/06	**Course name:** Selected Topics in Immunology
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 3

N	P
0.0	100.0

Provides: prof. MVDr. Juraj Koppel, DrSc., RNDr. Štefan Číkoš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VKFZ/06	**Course name:** Selected Topics in Physiology
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 0

N	P
0.0	0.0

Provides: prof. MVDr. Juraj Koppel, DrSc., RNDr. Štefan Číkoš, CSc.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: Dek. PF UPJŠ/JSD/14	**Course name:** Spring School for PhD Students
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 68

abs	n
100.0	0.0

Provides: doc. RNDr. Vladimír Zeleňák, PhD.
Date of last modification: 03.05.2015
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ ZSP/04	**Course name:** Study Stay Abroad
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 50	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VPSV/04	**Course name:** Supervision of a Students Scientific Work
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	

Course assessment
Total number of assessed students: 48

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ VBP/04	**Course name:** Supervision of Bachelor Thesis
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 semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 227	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ TBFC/04	**Course name:** Trends in Biophysical Chemistry
Course type, scope and the method: **Course type:** Lecture / Practice **Recommended course-load (hours):** **Per week:** 4 / 2 **Per study period:** 56 / 28 **Course method:** present	
Number of credits: 10	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course: Structure hierarchy of biological systems Time hierarchy in biological systems Regulatory mechanism Cooperativity Autocatalytic processes Atractors, fractals Surface interfaces Evolution of biological systems Molecular principles of morphogenesis, signal transductions Communications, chemotaxis Biomimetic materials Modern biophys.chem methods and devices Modern biophys. Methods and devices	
Recommended literature: Cantor,C.R.,Schimmel,P.R Biophysical Chemistry, W.H. Freeman and Co., S. Francisco,1980 Voet,D. Voet,J.G. Biochemistry, John Willey @Sons, 1990 Kersal E. van Holde, W. Curtis Johnson, P. Shing Ho: Principles of Physical Biochemistry, Prentise Hall, 1998 Articles from Journals	
Course language:	
Notes:	

Course assessment Total number of assessed students: 22	
N	P
0.0	100.0
Provides: prof. Ing. Marián Antalík, DrSc.	
Date of last modification: 03.05.2015	
Approved: prof. Ing. Marián Antalík, DrSc.	

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ PUI/06	**Course name:** Work with Literar Data from Internet
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 3	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 33	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.

COURSE INFORMATION LETTER

University: P. J. Šafárik University in Košice	
Faculty: Faculty of Science	
Course ID: ÚCHV/ PDS/14	**Course name:** Writing Dissertation Work
Course type, scope and the method: **Course type:** **Recommended course-load (hours):** **Per week: Per study period:** **Course method:** present	
Number of credits: 15	
Recommended semester/trimester of the course:	
Course level: III.	
Prerequisities:	
Conditions for course completion:	
Learning outcomes:	
Brief outline of the course:	
Recommended literature:	
Course language:	
Notes:	
Course assessment Total number of assessed students: 10	

abs	n
100.0	0.0

Provides:
Date of last modification:
Approved: prof. Ing. Marián Antalík, DrSc.