University: P. J. Šafárik University in Košice Faculty: Faculty of Science **Course ID:** KFaDF/ **Course name:** Ancient Philosophy and Present Times AFS/05 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:** 2. Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 30 C Α В D Е FX 83.33 6.67 6.67 0.0 0.0 3.33 Provides: Doc. PhDr. Peter Nezník, CSc. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

| University: P. J. Šafá  | rik University in Košice   |
|---|--|
| Faculty: Faculty of S   | cience   |
| Course ID: ÚCHV/<br>BBA1/03   | Course name: Bioenergetics and Bioelectronics  |
| Course type, scope a<br>Course type: Lectur<br>Recommended cour<br>Per week: 3 Per stu<br>Course method: pre  | re<br>rse-load (hours):<br>dy period: 42   |
| Number of credits: 5  |  |
| Recommended seme  | ster/trimester of the course:  |
| Course level: II.   |  |
| Prerequisities:   |  |
| Conditions for cours  | e completion:  |
| Learning outcomes:  |  |
| Photosynthesis, bacter<br>Oxidative phosphory<br>ATPases.<br>Membrane transport.<br>ATP metabolism.<br>Electron transport in<br>Electric sources, batter<br>Organic electric mater<br>Photolysis of water<br>Organic a biological | P, polyphosphates. ain, mitochondria, chloroplast, chemoautotrops. eriorodopsin. lation, chemical gradient.  biomacromolecules. ery. erials.   |
| M. Grätzel, ed., Ener<br>1983<br>L.A. Blumenfeld, Ph  | á, Biochémie, Victoria Publishing, Praha, 1994<br>gy Resources throught photochemistry and catalysis, Academic Press, NY,<br>ysics of bioenergetic processes, Springer-Verlag, Berlin, 1983<br>to J. L., Stryer L., Biochemistry, WH Freeman and Company, NY, 2007 |
| Course language:  |  |
| Notes:  |  |

| Course assessment Total number of assessed students: 10 |      |      |     |     |     |  |  |
|---|------|------|-----|-----|-----|--|--|
| A B C D E FX  |      |      |     |     |     |  |  |
| 40.0  | 50.0 | 10.0 | 0.0 | 0.0 | 0.0 |  |  |
| Provides: prof. Ing. Marián Antalík, DrSc.              |      |      |     |     |     |  |  |
| Date of last modification: 03.05.2015                   |      |      |     |     |     |  |  |
| Approved: prof. Ing. Marián Antalík, DrSc.              |      |      |     |     |     |  |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Biochemical Analytical Methods

BAM1/00

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.

**Prerequisities:** 

## **Conditions for course completion:**

Written examination

## **Learning outcomes:**

#### **Brief outline of the course:**

General principles of analytical biochemistry. Introduction to biomolecules. Application of spectroscopy. Centrifugation and separation. Chromatography of biomolecules. Principles and application of electrophoresis. Application of mass spectrometry. Immunochemical techniques Ions, electrodes and biosensors.

#### **Recommended literature:**

D. J. Holme, H. Peck: Analytical Biochemistry, 1998

S. R. Mikkelsen, E. Cortón: Bioanalytical Chemistry, 2004

V. A. Gault, N. H. McClenaghan: Understanding Bioanalytical Chemistry: Principles and applications, 2009

Course language:

Notes:

Course assessment

Total number of assessed students: 31

| A     | В     | С    | D    | Е   | FX  |
|-------|-------|------|------|-----|-----|
| 67.74 | 16.13 | 12.9 | 3.23 | 0.0 | 0.0 |

Provides: RNDr. Rastislav Varhač, PhD.

Date of last modification: 04.02.2016

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Biochemistry and Clinical Biochemistry BCHKBCH/14 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: II. Prerequisities: ÚCHV/BFC1a/01 and ÚCHV/KLB1/03 and ÚCHV/BFC1b/03 **Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 17 C Α В D Е FX 41.18 35.29 23.53 0.0 0.0 0.0 **Provides:** Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Biochemistry of Microorganisms

BCM/04

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.

**Prerequisities:** 

**Conditions for course completion:** 

2 tests test

#### **Learning outcomes:**

The aim of biochemistry of microorgamism teaching is to acquire knowledge in the field of microorganisms.

### **Brief outline of the course:**

Structure and physiology of microorganisms; microbial nutrition, growth and control; microbial molecular biology and genetics; medical microbiology; immunology and applied microbiology; microbial diseases and their control.

## **Recommended literature:**

McCall D., Stock D., Achrey P., Introduction to Microbiology, Blackwell Science, USA, 2001 Willey, J.M., Sherwood L.M., Woolverton C.J., Prescott, Harley, and Klein's Microbiology, McGraw-Hill Int. Ed., USA, 2008

Black J.G., Microbiology, John Wiley and Sons, USA, 2008

## Course language:

## **Notes:**

#### **Course assessment**

Total number of assessed students: 118

| A     | В     | C     | D    | Е    | FX  |
|-------|-------|-------|------|------|-----|
| 55.93 | 22.03 | 12.71 | 8.47 | 0.85 | 0.0 |

Provides: doc. RNDr. Mária Kožurková, CSc.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Biochemistry of Physiological Processes

BFP/04/08

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 2 Per study period: 28

Course method: present

Number of credits: 4

**Recommended semester/trimester of the course:** 

Course level: II.

**Prerequisities:** 

**Conditions for course completion:** 

## **Learning outcomes:**

#### **Brief outline of the course:**

Cell cycle; regulation mechanism of embryogenesis; apoptosis and degradation of biomacromolecules; regeneration processes; biochemical specialisation of inner cell particles; specialisation of body organs; metabolic functions of the liver and the kidney; the endocrine system, hormones; second messengers; generation and conduction of action potentials; synaptic transmission; immune system; blood sedimentation rate; communication between organisms; symbiosis; ecology.

#### **Recommended literature:**

D. Voet, J.G. Voetová, Biochemie, Viktoria Publishing, Praha, 1994

Alberts a kol., Molecular Biology of The Cell, 3rd edition, Garland Publishing, New York, 1994 H. Tedeshi, Cell Physiology, www.cellphysiology.com

Articles from Journals

### Course language:

#### Notes:

## Course assessment

Total number of assessed students: 70

| A    | В     | С     | D    | E    | FX  |
|------|-------|-------|------|------|-----|
| 50.0 | 22.86 | 12.86 | 8.57 | 5.71 | 0.0 |

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

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ | Course name: Bioorganic chemistry

BOC/03

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 3 Per study period: 42

Course method: present

Number of credits: 5

#### Recommended semester/trimester of the course:

Course level: II.

## **Prerequisities:**

## **Conditions for course completion:**

Examinationn

## **Learning outcomes:**

Explanation of fundamental principles for the construction of bioorganic molecular models of biochemical precesses using the tools of organic chemistry.

#### **Brief outline of the course:**

- 1. Introduction: Basic consideration, proximity effects in biochemistry, Molecular adaptation, Molecular recognition at the supramolecular level.
- 2. Bioorganic Chemistry of amino acids and polypeptides: Chemistry of the living cells, Analogy between organic reactions and biochemical tranformations, Chemistry of the peptide bond, Nonribosomal peptide formation, Asymmetric synthesis od amino acids, Asymmetric synthesis with chiral organometalic catalysts, Transition state analogs, Antibodies as enzymes, Chemical mutations, Molecular recognition and Drug design.
- 3. Bioorganic Chemistry of the Phosphate groups and polynucleotides: Energy storage, DNA intercalates, RNA molecules as catalysts.
- 4. Enzyme Chemistry: Introduction to catalysis and enzymes, Multifuntional catalysis and Simple models, alfa-Chymotrypsin, Other hydrolytic enzymes, Strereoelectronic control in hydrolytic reactions, Immobilized enzymes, Enzymes in synthetic organic chemistry, Enzyme-Analog-Built polymers, Design of molecular clefts.
- 5. Enzyme Models: Host-Guest complexation chemistry, New development in crown ether chemistry, Membrane chemistry and micelles, Polymers, Cyclodextrins, Enzyme design using steroid template, Remote functionalisation reactions, Polyene biomimetic cyclisations.
- 6. Metal Ions: Metal ions in proteins and biological molecules, Carbopeptidase A, Hydrolysis of amino acid esters and peptides, Iron and oxygen transport, Cooper ion, Cobalt and vitamin B12 action, Oxidoreduction, Pyridoxal phosphate, Biotin.

#### **Recommended literature:**

Voet J.: Biochemistry, Springer Verlag, 1998

Dugas H.: Bioorganic Chemistry, Springer Verlag, 1999.

## Course language:

| Notes:   |                   |              |      |      |     |  |  |
|--|-------------------|--------------|------|------|-----|--|--|
| Course assessment Total number of assessed students: 132 |                   |              |      |      |     |  |  |
| A B C D E FX   |                   |              |      |      |     |  |  |
| 87.12  | 5.3               | 2.27         | 3.79 | 1.52 | 0.0 |  |  |
| Provides: prof. RNDr. Jozef Gonda, DrSc.                 |                   |              |      |      |     |  |  |
| Date of last modification: 03.05.2015                    |                   |              |      |      |     |  |  |
| Approved: pro  | f. Ing. Marián An | talík, DrSc. |      |      |     |  |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ Course na

BFC1a/01

Course name: Biophysical Chemistry I

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.

**Prerequisities:** 

**Conditions for course completion:** 

Examination

## **Learning outcomes:**

#### **Brief outline of the course:**

Matter and its demonstration in living systems

Space and time connections in biological systems

Energy and mass connections in biological systems

Physicochemical properties of water and cell liquids

Reaction kinetics

Ligand binding

Nonequilibrium thermodynamics

Dynamics of conservative systems, chaos

Dissipative systems, attractors

Stability of biomacromolecules

Interfaces and membranes, membrane transports

Dynamics of complex biochemical process

Structuralization of biosystems induced by diffusion

#### Recommended literature:

Cantor, C.R., Schimmel, P.R. Biophysical Chemistry, W.H. Freeman and Co., S. Francisco, 1980 P.Glansdorff, I. Prigogine, Thermodynamics theory of structure, stability and fluctuations, Willey 1971

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

Marschall, A.G., Biophysical Chemistry, John Wiley & Sons, N. York, 1978

Hoppe, W., Lohmann, W., Markl, H., Ziegler, H., (eds.), Biophysics, Springer V., Berlin, 1983

Peitgen, H. O., Jurgens, H., Saupe, D., Fractals for the Classroom, Springer-Verlag, NY, 1992

Avnir, D (ed.)., The Fractal Approach to Heterogeneous Chemistry, John Wiley &S., NY, 1989

Winfree, A. T., The Geometry of Biological Time, Springer-Verlag, NY, 1980

| Harrison, L. G., Kinetic Theory of Living Pattrern, Cambridge Univ. Pres., NY, 1993 |                         |              |       |       |     |
|---|-------------------------|--------------|-------|-------|-----|
| Course langua   | ge:                     |              |       |       |     |
| Notes:  |                         |              |       | _     |     |
| Course assessn<br>Total number o  | nent of assessed studen | ts: 136      |       |       |     |
| A   | В                       | С            | D     | Е     | FX  |
| 13.97   | 18.38                   | 33.09        | 22.79 | 11.76 | 0.0 |
| Provides: prof.   | Ing. Marián Anta        | alík, DrSc.  |       |       |     |
| Date of last mo   | odification: 03.05      | 5.2015       |       |       |     |
| Approved: pro   | f. Ing. Marián An       | talík, DrSc. |       |       |     |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Biophysical Chemistry II BFC1b/03 Course type, scope and the method: Course type: Lecture / Practice **Recommended course-load (hours):** Per week: 2 / 4 Per study period: 28 / 56 Course method: present **Number of credits: 8** Recommended semester/trimester of the course: Course level: IL Prerequisities: ÚCHV/BFC1a/01 **Conditions for course completion:** Examination **Learning outcomes: Brief outline of the course:** General laboratory work problem with biological systems Properties of materials and fields Cryoscopy, pressure, density, surface tension, osmometry Callorimetry, microgravimetry Transport a hydrodynamic analysis Conductivity, ion selective and enzyme electrodes, dielectric spectroscopy Absorption spectroscopy, circular dichroism Raman and infrared spectroscopy, Spectrofluorescence, chemiluminescence, rapid kinetic techniques, Mossebauer spectroscopy NMR, EPR spectroscopy Light, x-ray scattering Atomic field force measurements, tunneling spectroscopy Microscopy (electron, light, ultrasound) Recommended literature: Cantor, C.R., Schimmel, P.R. Biophysical Chemistry, W.H. Freeman and Co., S. Francisco, 1980 Kersal E. van Holde, W. Curtis Johnson, P. Shing Ho: Principles of Physical Biochemistry, Prentise Hall, 1998 Atkins PW. Physical Chemistry, Oxford Univ. Press, Oxford, 1998 Hoppe W, Lohmann W, Markl H, Ziegler H (ed.) Biophysics, Springer- Verlag, Berlin, 1983 Articles from Journals Course language:

**Notes:** 

| Course assessment Total number of assessed students: 126 |  |       |       |       |      |  |  |
|--|--|-------|-------|-------|------|--|--|
| A B C D E FX   |  |       |       |       |      |  |  |
| 13.49  | 19.84                                      | 32.54 | 19.84 | 13.49 | 0.79 |  |  |
| Provides: prof. Ing. Marián Antalík, DrSc.               |  |       |       |       |      |  |  |
| Date of last modification: 03.05.2015                    |  |       |       |       |      |  |  |
| Approved: prof   | Approved: prof. Ing. Marián Antalík, DrSc. |       |       |       |      |  |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ Cours

Course name: Biotechnology Practical

PBT1/03

Course type, scope and the method:

Course type: Practice

Recommended course-load (hours): Per week: 5 Per study period: 70

Course method: present

**Number of credits:** 6

## Recommended semester/trimester of the course:

Course level: II.

## **Prerequisities:**

## **Conditions for course completion:**

test

test

#### **Learning outcomes:**

Aim of practicals is to learn a variety of spectral and molecular-biology techniques, and obtain practical biotechniological skills from food and beverage production .

#### **Brief outline of the course:**

Characterization and practical application of lactic and alcohol fermentation, spectral methods. Food preservatives and their qualitative and quantitative evidence. Antibiotics - bacteriocins. Vitamins - antioxidant action of vitamin C. Production of cosmetics.

## **Recommended literature:**

M.Ferenčík, B. Škárka, Biochemical laboratory methods, ALFA 1981.

C.Fini, A.Floridi, V.N. Finelli, B.Wittman-Liebold, Laboratory Methodology in Biochemistry, CRC Press, Florida, 1990.

D. Sabolová, Návody na praktické cvičenia z biotechnológie, Košice, 2014, http://www.upjs.sk/pracoviska/univerzitna-kniznica/e-publikacia/#pf.

## Course language:

#### **Notes:**

#### Course assessment

Total number of assessed students: 83

| A    | В     | С   | D   | Е   | FX  |
|------|-------|-----|-----|-----|-----|
| 75.9 | 20.48 | 1.2 | 1.2 | 1.2 | 0.0 |

Provides: RNDr. Danica Sabolová, PhD.

Date of last modification: 03.05.2015

| University: P. J. Šafá  | rik University in Košice        | 2                                      |
|---|---------------------------------|--|
| Faculty: Faculty of S   | cience                          |  |
| Course ID: ÚCHV/<br>RP/14   | Course name: Class F            | Project                                |
| Course type, scope a<br>Course type:<br>Recommended cou<br>Per week: Per stud<br>Course method: pro | rse-load (hours):<br>ly period: |  |
| Number of credits: (  | 6                               |  |
| Recommended seme  | ester/trimester of the co       | ourse: 2.                              |
| Course level: II.   |                                 |  |
| Prerequisities:   |                                 |  |
| Conditions for cours  | se completion:                  |  |
| Learning outcomes:  |                                 |  |
| Brief outline of the o  | course:                         |  |
| Recommended litera  | ature:                          |  |
| Course language:  |                                 |  |
| Notes:  | ,                               |  |
| Course assessment Total number of asse  | ssed students: 79               |  |
|   | abs                             | n                                      |
|   | 97.47                           | 2.53                                   |
| Provides: Mar Miro  | slav Almáši PhD. prof           | Mor Vasil' Andruch CSc prof Ing Marián |

Provides: Mgr. Miroslav Almáši, PhD., prof. Mgr. Vasil' Andruch, CSc., prof. Ing. Marián Antalík, DrSc., prof. Dr. Yaroslav Bazel', DrSc., doc. RNDr. Erik Sedlák, PhD., prof. RNDr. Juraj Černák, CSc., RNDr. Kvetoslava Stanková, PhD., RNDr. Andrea Straková Fedorková, PhD., RNDr. Monika Tvrdoňová, PhD., doc. RNDr. Zuzana Vargová, Ph.D., RNDr. Martin Vavra, PhD., doc. RNDr. Mária Ganajová, CSc., doc. RNDr. Viktor Víglaský, PhD., doc. Ing. Viera Vojteková, PhD., prof. RNDr. Jozef Gonda, DrSc., doc. RNDr. Taťana Gondová, CSc., doc. RNDr. Vladimír Zeleňák, PhD., prof. RNDr. Katarína Györyová, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Mária Kožurková, CSc., RNDr. Petra Krafčíková, RNDr. Juraj Kuchár, PhD., doc. RNDr. Miroslava Martinková, PhD., RNDr. Miroslava Matiková-Maľarová, PhD., MUDr. Angela Molčányiová, PhD., RNDr. Andrea Morovská Turoňová, PhD., doc. RNDr. Renáta Oriňaková, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Katarína Reiffová, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Nataša Tomášková, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Clinical Biochemistry KLB1/03 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: 5** Recommended semester/trimester of the course: Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 134 C A В D Е FX 61.19 26.87 8.21 2.24 1.49 0.0 Provides: MUDr. Angela Molčányiová, PhD. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

| University: P. J. Šafárik University in Košice  |   |              |   |  |  |  |
|---|---|--------------|---|--|--|--|
| Faculty: Faculty of Science   |   |              |   |  |  |  |
| Course ID:<br>KPPaPZ/KK/07  |   |              |   |  |  |  |
| Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre | ce<br>rse-load (hours):<br>dy period: 28<br>esent |              |   |  |  |  |
| Number of credits: 2  |   |              |   |  |  |  |
| Recommended seme  | ster/trimester of th                              | e course: 3. |   |  |  |  |
| Course level: II.   |   |              |   |  |  |  |
| 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: 281                                |              |   |  |  |  |
| abs   |   | n            | z |  |  |  |
| 98.22   | 98.22 1.78 0.0                                    |              |   |  |  |  |
| Provides: Mgr. Ondre  | ej Kalina, PhD.                                   |              | • |  |  |  |
| Date of last modification: 03.05.2015   |   |              |   |  |  |  |
| Approved: prof. Ing.  | Marián Antalík, Dr                                | Sc.          |   |  |  |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Diploma Thesis and its Defence **DPO/14** 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: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 64 C A В D Е FX 70.31 20.31 6.25 0.0 1.56 1.56 **Provides:** Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ Co

Course name: Enzymology

ENZ/04

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 3 Per study period: 42

Course method: present

**Number of credits: 5** 

## Recommended semester/trimester of the course:

Course level: II.

## **Prerequisities:**

## **Conditions for course completion:**

combination of written and oral examination

## **Learning outcomes:**

To learn to use the basic equations of enzyme kinetics. Ability to determine basic kinetic and thermodynamic parameters of enzyme catalyzed reaction from experimental measurement.

#### **Brief outline of the course:**

- 1. Introduction. Chemical catalysis theory of transition state.
- 2. Enzyme catalysis types and examples.
- 3. Cofactors. Active site lock and key, induced fit. Enzymes classification.
- 4. 3D structure of proteins. Noncovalent interactions. Secondary, tertiary and quaternary structures. Convergent and divergent evolution. Multienzyme complexes. Dyanmics of proteins.
- 5. Ligand binding. Thermodynamics and konetics. Techniques.
- 6. Chemical kinetics. Basic equations of enzyme kinetics.
- 7. Regulations of enzyme activity examples.
- 8. Conformational change, allosteric regulation. Regulation of metabolic pathways.
- 9. Experimental determination of enzyme activity. pH and temperature dependence of enzyme catalysis.
- 10. Determination of individual rate constants. Stop flow. Enzyme-substrate complementarities and the use of binding energy in enzyme catalysis.
- 11. Reversible inhibition.
- 12. Irreversible inhibition.
- 13. Specificity and control mechanisms. "Moonlighting" enzymes. Applications of enzymes (organic solvents). Catalytic antibodies. Extremophiles. Directed selection of enzymes. Enzymatic reactions with multiple substrates.

#### **Recommended literature:**

Alan Fersht "Structure and Mechanism in Protein Science: A Guide to Enzyme Catalysis and Protein Folding." (3rd Ed. W. H. Freeman and Company, 1999)

Robert A. Copeland: Enzymes (2nd edition), Wiley-VCH, 2000.

## Course language:

| Notes:  |  |       |       |      |      |  |
|---|--|-------|-------|------|------|--|
| Course assessment Total number of assessed students: 99 |  |       |       |      |      |  |
| A B C D E FX  |  |       |       |      |      |  |
| 39.39   | 22.22                                      | 15.15 | 14.14 | 8.08 | 1.01 |  |
| Provides: doc.  | Provides: doc. RNDr. Erik Sedlák, PhD.     |       |       |      |      |  |
| Date of last modification: 03.05.2015                   |  |       |       |      |      |  |
| Approved: pro   | Approved: prof. Ing. Marián Antalík, DrSc. |       |       |      |      |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Experimental Methods to Master's Thesis

EMDP/03

Course type, scope and the method:

Course type: Practice

Recommended course-load (hours): Per week: 6 Per study period: 84

Course method: present

**Number of credits:** 6

**Recommended semester/trimester of the course:** 

Course level: II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

**Course language:** 

**Notes:** 

Course assessment

Total number of assessed students: 255

| A     | В    | С    | D    | Е    | FX  |
|-------|------|------|------|------|-----|
| 95.69 | 2.35 | 0.78 | 0.78 | 0.39 | 0.0 |

Provides: RNDr. Martin Vavra, PhD., doc. RNDr. Peter Pristaš, CSc., doc. RNDr. Peter Javorský, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Mária Kožurková, CSc., prof. Ing. Marián Antalík, DrSc., prof. RNDr. Juraj Černák, CSc., prof. RNDr. Katarína Györyová, DrSc., prof. RNDr. Jozef Gonda, DrSc., prof. RNDr. Andrej Oriňak, PhD., doc. RNDr. Zuzana Vargová, Ph.D., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Miroslava Martinková, PhD., doc. RNDr. Renáta Oriňaková, DrSc., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Erik Sedlák, PhD., doc. RNDr. Vladimír Zeleňák, PhD., doc. RNDr. Viktor Víglaský, PhD., doc. RNDr. Katarína Reiffová, PhD., RNDr. Miroslava Matiková-Maľarová, PhD., RNDr. Juraj Kuchár, PhD., RNDr. Nataša Tomášková, PhD., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Dušan Koščík, CSc., RNDr. Daniela Kladeková, CSc., RNDr. Slávka Hamuľaková, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Zuzana Kudličková, PhD., RNDr. Lívia Kocúrová, PhD., prof. Mgr. Vasil' Andruch, CSc., prof. Dr. Yaroslav Bazel', DrSc., RNDr. Ladislav Janovec, PhD., doc. Ing. Viera Vojteková, PhD., Mgr. Miroslav Almáši, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: KFaDF/ **Course name:** History of Philosophy 2 (General Introduction) DF2p/03 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: I., II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 731 C Α В D Е FX 13.82 12.72 8.76 3.42 60.6 0.68

**Provides:** doc. PhDr. Pavol Tholt, PhD., mim. prof., Doc. PhDr. Peter Nezník, CSc., PhDr. Katarína Mayerová, PhD., Mgr. Róbert Stojka, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: KFaDF/ **Course name:** Chapters from History of Philosophy of 19th and 20th KDF/05 Centuries (General Introduction) 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: 2. Course level: II. **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 C Α В D Е FX 50.0 20.0 10.0 0.0 10.0 10.0 Provides: doc. PhDr. Pavol Tholt, PhD., mim. prof. Date of last modification: 03.05.2015

Page: 23

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: KFaDF/ **Course name:** Idea Humanitas 2 (General Introduction) IH2/03 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: 3. Course level: II. **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  $\mathbf{C}$ Α В D Е FX 87.5 12.5 0.0 0.0 0.0 0.0 Provides: Doc. PhDr. Peter Nezník, CSc. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

| University: P. J. Šafárik University in Košice   |                             |       |  |  |  |
|--|-----------------------------|-------|--|--|--|
| Faculty: Faculty of Science  |                             |       |  |  |  |
| Course ID: ÚCHV/ Course name: Laboratórne cvičenia k diplomovej práci  |                             |       |  |  |  |
| 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: 3. |  |  |  |
| Course level: II.  |                             |       |  |  |  |
| Prerequisities:  |                             |       |  |  |  |
| Conditions for cours   | se completion:              |       |  |  |  |
| Learning outcomes:   |                             |       |  |  |  |
| Brief outline of the c   | ourse:                      |       |  |  |  |
| Recommended litera   | iture:                      |       |  |  |  |
| Course language:   |                             |       |  |  |  |
| Notes:   |                             |       |  |  |  |
| Course assessment Total number of asse   | ssed students: 9            |       |  |  |  |
|  | abs                         | n     |  |  |  |
| 88.89 11.11  |                             |       |  |  |  |
| <b>Provides:</b> doc. RNDr. Mária Kožurková, CSc., prof. Ing. Marián Antalík, DrSc., doc. RNDr. Viktor Víglaský, PhD., doc. RNDr. Erik Sedlák, PhD., RNDr. Nataša Tomášková, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD. |                             |       |  |  |  |
| Date of last modification:   |                             |       |  |  |  |
| Approved: prof. Ing. Marián Antalík, DrSc.   |                             |       |  |  |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Laboratory Practicals of Molecular Biology LMB/08 Course type, scope and the method: Course type: Practice **Recommended course-load (hours):** Per week: 4 Per study period: 56 Course method: present **Number of credits: 5** Recommended semester/trimester of the course: Course level: II. Prerequisities: ÚCHV/BFC1a/01 **Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 100 C A В D Е FX 30.0 26.0 29.0 14.0 0.0 1.0 Provides: doc. RNDr. Viktor Víglaský, PhD. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Modern Trends in Biochemistry and Molecular Biology

BMB1/03

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: II.

**Prerequisities:** 

**Conditions for course completion:** 

### **Learning outcomes:**

To give an overview on modern biochemistry and molecular biology methods and its application in practice

## **Brief outline of the course:**

Application of modern biochemistry and molecular biology methods for gene analysis, quantification of gene expression, nanotechnology and biotechnology.

## **Recommended literature:**

Alberts et al: Molecular Biology of the Cell, Garland Publishing, 1994

Watson et al., Recombinant DNA, New York, 1992

Bloomfield et al., Nucleic acids - structures, properties and function, Canada, 1999

#### **Course language:**

**Notes:** 

Course assessment

Total number of assessed students: 145

| A     | В     | С     | D    | Е    | FX   |
|-------|-------|-------|------|------|------|
| 36.55 | 22.07 | 27.59 | 9.66 | 3.45 | 0.69 |

Provides: doc. RNDr. Viktor Víglaský, PhD.

Date of last modification: 03.05.2015

| University: P. J. Šafá   | rik University in Košice                            |       |  |  |
|--|---|-------|--|--|
| Faculty: Faculty of S  | cience  |       |  |  |
| Course ID: ÚTVŠ/ Course name: Naval Yachting NJ//13  |   |       |  |  |
| Course type, scope a<br>Course type: Practic<br>Recommended cou<br>Per week: 36 Per st<br>Course method: pro | ce<br>rse-load (hours):<br>udy period: 504<br>esent |       |  |  |
| Number of credits: 2   |   |       |  |  |
| Recommended seme   | ster/trimester of the cou                           | irse: |  |  |
| Course level: I., II.  |   |       |  |  |
| Prerequisities:  |   |       |  |  |
| Conditions for cours   | se completion:                                      |       |  |  |
| Learning outcomes:   |   |       |  |  |
| Brief outline of the c   | ourse:  |       |  |  |
| Recommended litera   | iture:  |       |  |  |
| Course language:   |   |       |  |  |
| Notes:   |   |       |  |  |
| Course assessment Total number of asse   | ssed students: 2                                    |       |  |  |
| abs  |   |       |  |  |
| 100.0 0.0  |   |       |  |  |
| Provides: doc. Mgr. l  | Rastislav Feč, PhD.                                 | ·     |  |  |
| Date of last modifica  | ntion: 03.05.2015                                   |       |  |  |
| Approved: prof. Ing.   | Marián Antalík, DrSc.                               |       |  |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ Course name: Patobiochemistry PAT1/03 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: 7** Recommended semester/trimester of the course: Course level: II. Prerequisities: ÚCHV/KLB1/03 **Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 130 C A В D Е FX 70.0 20.0 7.69 0.0 0.0 2.31 Provides: MUDr. Angela Molčányiová, PhD. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** PC in Biomacromolecule Analysis

VPC/01

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.

**Prerequisities:** 

## **Conditions for course completion:**

### **Learning outcomes:**

Analysis of nucleotide and aminoacid sequences by personal computers (PC) and free software (BioEdit, Prophet, GeneDoc, RasMol, VNTI-Viewer) and web-based analysis tool (blast, fasta, clustal). Introduction to public biological databases (PubMed, GenBank, SwissProt) and data mining. Specialized analysis – molecular taxonomy, phylogenetic analysis, prediction of biopolymers structure.

### **Brief outline of the course:**

Usage of PC and WWW network for biological sequence analysis. History of Internet, FTP, E-mail services. Freely available biological and biomedicinal databases (PubMed, GenBank, SwissProt). Nucleotide sequence analysis. Protein sequence analysis. Pairwise sequence comparisons – blast software. Multiple sequence comparisons – clustal software. Molecular taxonomy of bacteria. Evolutionary and phylogenetic analysis. Seconadary and tertiary structure prediction.

#### **Recommended literature:**

The phylogenetic handbook, Salemi, M. a Vandamme, A-M., Cambridge University Press, 2003, 485 s

## Course language:

Notes:

#### Course assessment

Total number of assessed students: 46

| A     | В   | С   | D   | Е   | FX  |
|-------|-----|-----|-----|-----|-----|
| 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Provides: doc. RNDr. Peter Pristaš, CSc.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: Dek. PF **Course name:** Personality Development and Key Competences for Success UPJŠ/PPZ/13 on a Labour Market Course type, scope and the method: Course type: Practice **Recommended course-load (hours):** Per week: Per study period: 14s Course method: present Number of credits: 2 Recommended semester/trimester of the course: 1., 3. Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 39 C Α В D Е FX 100.0 0.0 0.0 0.0 0.0 0.0 Provides: RNDr. Peter Stefányi, PhD. Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Proteins, Structure and Function

**PSF/03** 

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 3 Per study period: 42

Course method: present

**Number of credits: 5** 

**Recommended semester/trimester of the course:** 

Course level: II.

**Prerequisities:** 

## **Conditions for course completion:**

Written examination

## **Learning outcomes:**

Ability to suggest/use suitable methods for determination of structural and functional properties of proteins.

#### **Brief outline of the course:**

Chemical properties of polypeptides. Detection of amino acids, peptides and proteins. Biosynthesis of proteins – procaryotes. Biosynthesis of proteins – eucaryotes. Topogenesis. Protein folding. Postranslational covalent modifications of polypeptide chains. Physical interactions that determine the properties of proteins. Conformational properties of polypeptide chains. Proteins in solution and in membranes. Interactions with other molecules. Allostery. Degradation. Extremophiles.

#### **Recommended literature:**

Creighton T. E.: Proteins: Structures and Molecular Properties (2. vyd.), 1992

Buxbaum E.: Fundamentals of Protein Structure and Function, 2007

Nölting B.: Protein Folding Kinetics: Biophysical Methods (2. vyd.), 2006

Nelson D. L., Cox M. M.: Lehninger Principles of Biochemistry (4. vyd.), 2004

Whitford D.: Proteins: Structure and Function, 2011

Kessel A., Ben-Tal N.: Introduction to Proteins: Structure, Function, and Motion, 2011

## Course language:

## **Notes:**

#### Course assessment

Total number of assessed students: 118

| A     | В     | С    | D    | Е    | FX   |
|-------|-------|------|------|------|------|
| 47.46 | 19.49 | 17.8 | 8.47 | 5.93 | 0.85 |

Provides: doc. RNDr. Erik Sedlák, PhD., RNDr. Rastislav Varhač, PhD.

Date of last modification: 04.02.2016

Page: 32

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: Course na

**Course name:** Psychology and Health Psychology (Master's Study)

KPPaPZ/PPZMg/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

**Recommended semester/trimester of the course:** 

Course level: II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

Course language:

**Notes:** 

Course assessment

Total number of assessed students: 223

| A     | В     | С     | D     | Е     | FX   |
|-------|-------|-------|-------|-------|------|
| 19.73 | 25.56 | 25.56 | 12.56 | 16.14 | 0.45 |

**Provides:** PhDr. Anna Janovská, PhD., PhDr. Karolína Barinková, PhD., Mgr. Lucia Hricová, PhD.

Date of last modification: 03.05.2015

| University: P. J. Šafárik University in Košice   |  |               |  |  |  |
|--|--|---------------|--|--|--|
| Faculty: Faculty of S  | cience   |               |  |  |  |
| Course ID: ÚTVŠ/ ÚTVŠ/CM/13  Course name: Seaside Aerobic Exercise   |  |               |  |  |  |
| Course type, scope a<br>Course type: Practic<br>Recommended cou<br>Per week: 36 Per st<br>Course method: pre | ce<br>rse-load (hours):<br>cudy period: 504<br>esent |               |  |  |  |
| Number of credits: 2   |  |               |  |  |  |
| Recommended seme   | ester/trimester of the cours                         | e:            |  |  |  |
| Course level: I., II.  |  |               |  |  |  |
| Prerequisities:  |  |               |  |  |  |
| Conditions for cours   | se completion:                                       |               |  |  |  |
| Learning outcomes:   |  |               |  |  |  |
| Brief outline of the c   | course:  |               |  |  |  |
| Recommended litera   | ature:   |               |  |  |  |
| Course language:   |  |               |  |  |  |
| Notes:   |  |               |  |  |  |
| Course assessment Total number of asse   | ssed students: 7                                     |               |  |  |  |
| abs n  |  |               |  |  |  |
| 57.14 42.86  |  |               |  |  |  |
| Provides: Mgr. Alena   | a Buková, PhD., Mgr. Agata                           | Horbacz, PhD. |  |  |  |
| Date of last modifica  | ntion: 03.05.2015                                    |               |  |  |  |
| Annroved: prof Ing   | Approved: prof Ing Marián Antalík DrSc               |               |  |  |  |

| University: P. J. Šafárik University in Košice   |  |       |  |  |  |  |
|--|--|-------|--|--|--|--|
| Faculty: Faculty of Science  |  |       |  |  |  |  |
| Course ID: ÚCHV/<br>SP1/14   | Course ID: ÚCHV/ Course name: Semestral Project I<br>P1/14 |       |  |  |  |  |
| Course type, scope a<br>Course type:<br>Recommended cou<br>Per week: Per stud<br>Course method: pre  | rse-load (hours):<br>ly period:                            |       |  |  |  |  |
| Number of credits: 4   | 1  |       |  |  |  |  |
| Recommended seme   | ster/trimester of the cours                                | e: 1. |  |  |  |  |
| Course level: II.  |  |       |  |  |  |  |
| Prerequisities:  | -  |       |  |  |  |  |
| Conditions for cours   | se completion:   |       |  |  |  |  |
| Learning outcomes:   |  |       |  |  |  |  |
| Brief outline of the c   | course:  |       |  |  |  |  |
| Recommended litera   | ature:   |       |  |  |  |  |
| Course language:   |  |       |  |  |  |  |
| Notes:   |  |       |  |  |  |  |
| Course assessment Total number of asse   | ssed students: 72  |       |  |  |  |  |
|  | abs  | n     |  |  |  |  |
| 98.61 1.39   |  |       |  |  |  |  |
| <b>Provides:</b> RNDr. Rastislav Serbin, PhD., doc. RNDr. Mária Kožurková, CSc., prof. Dr. Yaroslav Bazeľ, DrSc., prof. RNDr. Jozef Gonda, DrSc., prof. RNDr. Katarína Györyová, DrSc., doc. RNDr. Ján Imrich, CSc., doc. RNDr. Miroslava Martinková, PhD., doc. RNDr. Erik Sedlák, PhD., RNDr. Nataša Tomášková, PhD., doc. RNDr. Viktor Víglaský, PhD., RNDr. Rastislav Varhač, PhD., RNDr. Danica Sabolová, PhD., RNDr. Jana Šandrejová, PhD., doc. RNDr. Ivan Potočňák, PhD. |  |       |  |  |  |  |
| Date of last modification: 03.05.2015  |  |       |  |  |  |  |
| Approved: prof Ing Marián Antalík DrSc   |  |       |  |  |  |  |

| University: P. J. Šafárik University in Košice   |   |  |  |  |
|--|---|--|--|--|
| Faculty: Faculty of Science  |   |  |  |  |
| Course ID: ÚCHV/<br>SP2/14   | ID: ÚCHV/ Course name: Semestral Project II   |  |  |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre   | rse-load (hours):<br>ly period:   |  |  |  |
| Number of credits: 6   | )   |  |  |  |
| Recommended seme   | ster/trimester of the cours   | e: 3.  |  |  |
| Course level: II.  |   |  |  |  |
| 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: 44   |  |  |  |
|  | abs   | n  |  |  |
|  | 100.0   | 0.0  |  |  |
| Andruch, CSc., prof. I<br>Erik Sedlák, PhD., do<br>PhD., RNDr. Monika<br>PhD., prof. RNDr. Joz<br>Györyová, DrSc., doc<br>Ivan Potočňák, PhD.,<br>RNDr. Viktor Víglask | Ing. Marián Antalík, DrSc., c. RNDr. Miroslava Martinl Tvrdoňová, PhD., doc. RNI zef Gonda, DrSc., doc. Ing. RNDr. Vladimír Zeleňák, doc. RNDr. Katarína Reifforý, PhD., RNDr. Danica Sab | NDr. Mária Kožurková, CSc., prof. Mgr. Vasil' prof. Dr. Yaroslav Bazel', DrSc., doc. RNDr. ková, PhD., RNDr. Andrea Straková Fedorková, Dr. Mária Ganajová, CSc., RNDr. Martin Vavra, Viera Vojteková, PhD., prof. RNDr. Katarína PhD., doc. RNDr. Ján Imrich, CSc., doc. RNDr. vá, PhD., RNDr. Nataša Tomášková, PhD., doc. olová, PhD., RNDr. Rastislav Varhač, PhD., doc. á, PhD., Mgr. Miroslav Almáši, PhD. |  |  |
| Date of last modifica  | tion: 03.05.2015  |  |  |  |
| Approved: prof. Ing.   | Marián Antalík, DrSc.   |  |  |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/

**Course name:** Seminar to Diploma Thesis

SDP/03

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: 4.

Course level: II.

### **Prerequisities:**

#### **Conditions for course completion:**

Consultations, discussions and presentations.

Assessment of student's work during the semester by supervisor.

#### **Learning outcomes:**

Teach the student to prepare presentation of his own results, critical acceptation of information, participate in scientific discussion and formal requirements of written diploma work.

#### **Brief outline of the course:**

Presentation of literature information and own experimental results, scientific discussions and writing of scientific text.

#### **Recommended literature:**

According to the field of diploma work.

### Course language:

#### **Notes:**

### **Course assessment**

Total number of assessed students: 213

| A     | В    | С    | D    | Е   | FX   |
|-------|------|------|------|-----|------|
| 95.31 | 2.82 | 0.94 | 0.47 | 0.0 | 0.47 |

**Provides:** RNDr. Martin Vavra, PhD., RNDr. Andrea Straková Fedorková, PhD., doc. RNDr. Mária Kožurková, CSc., prof. RNDr. Juraj Černák, CSc., prof. RNDr. Katarína Györyová, DrSc., prof. Dr. Yaroslav Bazeľ, DrSc., prof. RNDr. Andrej Oriňak, PhD., doc. RNDr. Vladimír Zeleňák, PhD., doc. RNDr. Zuzana Vargová, Ph.D., doc. RNDr. Ivan Potočňák, PhD., doc. RNDr. Taťána Gondová, CSc., doc. RNDr. Katarína Reiffová, PhD., doc. RNDr. Mária Reháková, CSc., prof. Mgr. Vasiľ Andruch, CSc., doc. RNDr. Renáta Oriňaková, DrSc., RNDr. Miroslava Matiková-Maľarová, PhD., RNDr. Juraj Kuchár, PhD., RNDr. Andrea Morovská Turoňová, PhD., RNDr. Lívia Kocúrová, PhD., Mgr. Miroslav Almáši, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science **Course ID:** Course name: Social-Psychological Training of Coping with Critical Life KPPaPZ/SPVKE/07 Situations 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: 2. Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 111 abs n  $\mathbf{Z}$ 97.3 2.7 0.0 Provides: Mgr. Ondrej Kalina, PhD. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ | Course na

Course name: Sports Activities I.

TVa/11

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:** 1.

Course level: I., I.II., II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

Course language:

**Notes:** 

Course assessment

Total number of assessed students: 7947

| abs   | n    | neabs |
|-------|------|-------|
| 87.96 | 8.12 | 3.93  |

**Provides:** PaedDr. Imrich Staško, doc. PhDr. Ivan Šulc, CSc., doc. Mgr. Rastislav Feč, PhD., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., PaedDr. Milena Švedová, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ C

Course name: Sports Activities II.

TVb/11

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:** 2.

Course level: I., I.II., II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

Course language:

**Notes:** 

Course assessment

Total number of assessed students: 7437

| abs   | n     | neabs |
|-------|-------|-------|
| 85.03 | 10.93 | 4.03  |

**Provides:** PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, doc. PaedDr. Ivan Uher, PhD., Mgr. Peter Bakalár, PhD., PaedDr. Milena Švedová, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ | Course name: Sport

TVc/11

Course name: Sports Activities III.

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:** 3.

Course level: I., I.II., II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

**Course language:** 

**Notes:** 

Course assessment

Total number of assessed students: 4650

| abs   | n    | neabs |
|-------|------|-------|
| 89.63 | 4.71 | 5.66  |

**Provides:** PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, doc. PaedDr. Ivan Uher, PhD., PaedDr. Milena Švedová, PhD., Mgr. Peter Bakalár, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚTVŠ/ | Course na

**Course name:** Sports Activities IV.

TVd/11

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: 4.

Course level: I., I.II., II.

**Prerequisities:** 

**Conditions for course completion:** 

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

Course language:

**Notes:** 

Course assessment

Total number of assessed students: 3884

| abs   | n    | neabs |
|-------|------|-------|
| 85.79 | 6.77 | 7.44  |

**Provides:** PaedDr. Imrich Staško, doc. Mgr. Rastislav Feč, PhD., doc. PhDr. Ivan Šulc, CSc., Mgr. Ivan Matúš, PhD., Mgr. Zuzana Küchelová, PaedDr. Milena Švedová, PhD., Mgr. Peter Bakalár, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Agata Horbacz, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Lucia Kršňáková, PhD., Mgr. Dávid Kaško, Mgr. Aurel Zelko, PhD., Mgr. Dana Dračková, PhD.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚCHV/ **Course name:** Students Scientific Conference - Seminar and Presentation SVKBCH/03 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: 4 Recommended semester/trimester of the course: Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 40  $\mathbf{C}$ A В D Е FX 100.0 0.0 0.0 0.0 0.0 0.0 Provides: doc. RNDr. Mária Kožurková, CSc. Date of last modification: 03.05.2015

| University: P. J. Šafái  | University: P. J. Šafárik University in Košice |    |  |
|--|--|----|--|
| Faculty: Faculty of Science  |  |    |  |
| Course ID: ÚTVŠ/<br>LKSp//13   |  |    |  |
| Course type, scope a<br>Course type: Practic<br>Recommended cour<br>Per week: 36 Per str<br>Course method: pre | ee<br>rse-load (hours):<br>udy period: 504     |    |  |
| Number of credits: 2   |  |    |  |
| Recommended seme   | ster/trimester of the cours                    | e: |  |
| Course level: I., II.  |  |    |  |
| Prerequisities:  |  |    |  |
| <b>Conditions for cours</b>  | e completion:                                  |    |  |
| Learning outcomes:   |  |    |  |
| Brief outline of the c   | ourse:   |    |  |
| Recommended litera   | ture:  |    |  |
| Course language:   |  |    |  |
| Notes:   |  |    |  |
| Course assessment Total number of asses  | ssed students: 92                              |    |  |
|  | abs  |    |  |
| 35.87 64.13  |  |    |  |
| Provides: Mgr. Peter Bakalár, PhD.   |  |    |  |
| Date of last modification: 03.05.2015  |  |    |  |
| Approved: prof. Ing. Marián Antalík, DrSc.   |  |    |  |

| University: P. J. Šafá   | rik University in Košice                             |           |  |  |
|--|--|-----------|--|--|
| Faculty: Faculty of S  | cience   |           |  |  |
| Course ID: ÚTVŠ/<br>KP/12  | Course name: Survival Course                         |           |  |  |
| Course type, scope a<br>Course type: Practic<br>Recommended cou<br>Per week: 36 Per st<br>Course method: pre | ce<br>rse-load (hours):<br>sudy period: 504<br>esent |           |  |  |
| Number of credits: 2   |  |           |  |  |
|  | ster/trimester of the cours                          | e:<br>    |  |  |
| Course level: I., II.  |  |           |  |  |
| Prerequisities:  | ,  |           |  |  |
| Conditions for cours   | se completion:                                       |           |  |  |
| Learning outcomes:   |  |           |  |  |
| Brief outline of the c   | course:  |           |  |  |
| Recommended litera   | nture:   |           |  |  |
| Course language:   |  |           |  |  |
| Notes:   |  |           |  |  |
| Course assessment Total number of asse   | ssed students: 251                                   |           |  |  |
| abs n  |  |           |  |  |
| 43.82 56.18  |  |           |  |  |
| Provides: Mgr. Mare  | k Valanský, MUDr. Peter De                           | ombrovský |  |  |
| Date of last modifica  | ntion: 03.05.2015                                    |           |  |  |
| Approved: prof. Ing.   | Marián Antalík, DrSc.                                |           |  |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science **Course ID:** Course name: The Art of Aiding by Verbal Exchange KPPaPZ/UPR/03 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: 4. Course level: II. **Prerequisities: Conditions for course completion: Learning outcomes: Brief outline of the course: Recommended literature:** Course language: **Notes:** Course assessment Total number of assessed students: 49 C A В D Е FX 85.71 4.08 2.04 2.04 2.04 4.08 Provides: Mgr. Ondrej Kalina, PhD. Date of last modification: 03.05.2015 Approved: prof. Ing. Marián Antalík, DrSc.

| University: P. J. Šafá  | University: P. J. Šafárik University in Košice      |   |  |  |
|---|---|---|--|--|
| Faculty: Faculty of Science   |   |   |  |  |
| Course ID: ÚTVŠ/<br>ZKLS//13  | Course name: Winter Ski                             | Course name: Winter Ski Training Course |  |  |
| Course type, scope a<br>Course type: Practic<br>Recommended cour<br>Per week: 36 Per st<br>Course method: pre | ce<br>rse-load (hours):<br>udy period: 504<br>esent |   |  |  |
| Number of credits: 2  |   |   |  |  |
| Recommended seme  | ster/trimester of the cours                         | e:                                      |  |  |
| Course level: I., II.   |   |   |  |  |
| Prerequisities:   |   |   |  |  |
| Conditions for cours  | se completion:                                      |   |  |  |
| Learning outcomes:  |   |   |  |  |
| Brief outline of the c  | ourse:  |   |  |  |
| Recommended litera  | iture:  |   |  |  |
| Course language:  |   |   |  |  |
| Notes:  |   |   |  |  |
| Course assessment Total number of asse  | ssed students: 81                                   |   |  |  |
| abs n   |   |   |  |  |
| 32.1 67.9   |   |   |  |  |
| Provides: PaedDr. Imrich Staško, doc. PhDr. Ivan Šulc, CSc.   |   |   |  |  |
| Date of last modifica   | ition: 03.05.2015                                   |   |  |  |
| Approved: prof. Ing.  | Marián Antalík, DrSc.                               |   |  |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚCHV/ C

Course name: Xenobiochemistry

XBCH/04

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 3 Per study period: 42

Course method: present

**Number of credits: 5** 

**Recommended semester/trimester of the course:** 

Course level: II.

**Prerequisities:** 

**Conditions for course completion:** 

test

## **Learning outcomes:**

Students obtained modern knowledge of xenobiotics metabolism in living organisms

#### **Brief outline of the course:**

Characterization of metabolism of xenobiotics in the liver. The basic types of biotransformation reactions - oxidation, reduction, hydrolysis, conjugation. Biotransformation enzymes. Free radicals and their effects, lipid peroxidation.

### **Recommended literature:**

Z. Ďuračková: Voľné radikály a antioxidanty v medicíne, Slovak akademik press 1998.

Z. Vodrážka: Biochémia, Praha, 1996.

A. Jindra: Biochémia, molekulárnobiologické a farmakologické aspekty, Praha, 1985.

### Course language:

**Notes:** 

#### Course assessment

Total number of assessed students: 40

| A    | В    | C    | D   | Е   | FX  |
|------|------|------|-----|-----|-----|
| 62.5 | 20.0 | 10.0 | 2.5 | 5.0 | 0.0 |

Provides: prof. Ing. Marián Antalík, DrSc., RNDr. Danica Sabolová, PhD.

Date of last modification: 03.05.2015

**Approved:** prof. Ing. Marián Antalík, DrSc.

Page: 50

| University: P. J. Šafárik University in Košice |  |    |  |
|--|--|----|--|
| Faculty: Faculty of Science                    |  |    |  |
| Course ID: D<br>PrávF/ZP2/11                   | Course name: Základy práva pre prirodovedcov II                      |    |  |
| Course method: pre                             | re / Practice<br>rse-load (hours):<br>study period: 28 / 14<br>esent |    |  |
| Number of credits: 4                           |  |    |  |
| Recommended seme                               | ster/trimester of the cours  | 2: |  |
| Course level: II.                              |  |    |  |
| Prerequisities:                                |  |    |  |
| Conditions for cours                           | e completion:  |    |  |
| Learning outcomes:                             |  |    |  |
| Brief outline of the c                         | ourse:   |    |  |
| Recommended litera                             | ture:  |    |  |
| Course language:                               |  |    |  |
| Notes:   |  |    |  |
| Course assessment Total number of asses        | ssed students: 95  |    |  |
| abs n  |  |    |  |
| 97.89 2.11                                     |  |    |  |
| Provides:                                      |  |    |  |
| Date of last modifica                          | tion: 03.05.2015   |    |  |
| Approved: prof. Ing.                           | Marián Antalík, DrSc.  |    |  |