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| University: P. J. Šafárik University in Košice  |  |                        |    |  |
|---|--|------------------------|----|--|
| Faculty: Faculty of S   | Faculty: Faculty of Science              |                        |    |  |
| Course ID: ÚFV/<br>IG/04  | Course name: Acquire                     | ment of Internal Grant |    |  |
| 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:<br>esent |                        |    |  |
| Number of ECTS cr   | edits: 10                                |                        |    |  |
| Recommended seme  | ster/trimester of the co                 | urse:                  |    |  |
| Course level: III.  |  |                        |    |  |
| Prerequisities:   |  |                        |    |  |
| Conditions for cours  | e completion:                            |                        |    |  |
| Learning outcomes:  |  |                        |    |  |
| Brief outline of the c  | ourse:                                   |                        |    |  |
| Recommended litera  | iture:                                   |                        |    |  |
| Course language:  |  |                        |    |  |
| Notes:  |  |                        |    |  |
| Course assessment Total number of asse  | ssed students: 123                       |                        |    |  |
|   | abs                                      |                        | n  |  |
|   | 100.0                                    | 0                      | .0 |  |
| <b>Provides:</b>  |  | '                      |    |  |
| Date of last modifica   | tion:                                    |                        |    |  |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc.                 |                        |    |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: ÚFV/ Course name: Astrophysics
ASTF/15

Course type, scope and the method:

Course type: Lecture

Recommended course-load (hours): Per week: 4 Per study period: 56

Course method: present

**Number of ECTS credits: 10** 

**Recommended semester/trimester of the course:** 1.

Course level: III.

### **Prerequisities:**

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

Seminar essay.

Oral exam with preparation; 3 questions within the curriculum presented during the course.

### **Learning outcomes:**

Become acquainted with other aspects of the formation of spectra in stellar atmospheres.

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

Chemical analysis; measurement of stellar radii and temperatures; measurements of photospheric pressure; stellar rotation; velocity fields in stellar photospheres; microturbulence and macroturbulence; stellar granulation.

### **Recommended literature:**

- 1. Gray, D.F., The observation and analysis of stellar photospheres, Cambridge University Press, Cambridge, 1992;
- 2. Böhm-Vitense, E., Introduction to stellar astrophysics, Stellar atmospheres, Cambridge University Press, Cambridge, 1997;
- 3. Kipenhahn, R., Weigert, A., Stellar Structure and evolution, Springer-Verlag, Berlin, 1990;

### Course language:

Slovak, English

#### **Notes:**

#### Course assessment

Total number of assessed students: 5

| N   | P     |
|-----|-------|
| 0.0 | 100.0 |

Provides: doc. RNDr. Rudolf Gális, PhD.

Date of last modification: 26.09.2017

| University: P. J. Šafa  | árik University in Košice        |                                  |  |
|---|----------------------------------|----------------------------------|--|
| Faculty: Faculty of Science   |                                  |                                  |  |
| Course ID: ÚFV/<br>PVS/04   | Course name: Author'             | s patents, discoveries, software |  |
| Course type, scope<br>Course type:<br>Recommended cou<br>Per week: Per stu<br>Course method: pr | ırse-load (hours):<br>dy period: |                                  |  |
| Number of ECTS c  | redits: 2                        |                                  |  |
| Recommended sem   | ester/trimester of the co        | ourse:                           |  |
| Course level: III.  |                                  |                                  |  |
| Prerequisities:   |                                  |                                  |  |
| Conditions for cour   | se completion:                   |                                  |  |
| Learning outcomes   | •                                |                                  |  |
| Brief outline of the  | course:                          |                                  |  |
| Recommended liter   | ature:                           |                                  |  |
| Course language:  |                                  |                                  |  |
| Notes:  |                                  |                                  |  |
| Course assessment Total number of asse  | essed students: 37               |                                  |  |
|   | abs                              | n                                |  |
|   | 100.0                            | 0.0                              |  |
| Provides:   |                                  |                                  |  |
| Date of last modific  | ation:                           |                                  |  |
| Approved: prof. RN  | Dr. Michal Hnatič, DrSc          | -                                |  |

| University: P. J. Šafá   | rik University in Košio                  | ce              |  |
|--|--|-----------------|--|
| Faculty: Faculty of Science  |  |                 |  |
| Course ID: ÚFV/<br>CM/04   | Course name: Citation                    | on in monograph |  |
| Course type, scope a<br>Course type:<br>Recommended cour<br>Per week: Per stud<br>Course method: pre | rse-load (hours):<br>ly period:<br>esent |                 |  |
| Number of ECTS cr  |  |                 |  |
|  | ster/trimester of the                    | course:         |  |
| Course level: III.   |  |                 |  |
| 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: 1                         |                 |  |
|  | abs                                      | n               |  |
|  | 100.0                                    | 0.0             |  |
| Provides:  |  |                 |  |
| Date of last modifica  | tion:                                    |                 |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrS                   | Sc.             |  |

| University: P. J. Šafárik University in Košice   |                                 |                                       |  |  |
|--|---------------------------------|---------------------------------------|--|--|
| Faculty: Faculty of S  | Faculty: Faculty of Science     |                                       |  |  |
| Course ID: ÚFV/<br>CZC/04  | Course name: Citation i         | n scientific journal published abroad |  |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period: |                                       |  |  |
| Number of ECTS cr  | edits: 10                       |                                       |  |  |
| Recommended seme   | ster/trimester of the cou       | rse:                                  |  |  |
| Course level: III.   |                                 |                                       |  |  |
| Prerequisities:  |                                 |                                       |  |  |
| Conditions for cours   | e completion:                   |                                       |  |  |
| Learning outcomes:   |                                 |                                       |  |  |
| Brief outline of the c   | ourse:                          |                                       |  |  |
| Recommended litera   | iture:                          |                                       |  |  |
| Course language:   |                                 |                                       |  |  |
| Notes:   |                                 |                                       |  |  |
| Course assessment Total number of asses  | ssed students: 60               |                                       |  |  |
|  | abs                             | n                                     |  |  |
|  | 100.0                           | 0.0                                   |  |  |
| Provides:  |                                 |                                       |  |  |
| Date of last modifica  | tion:                           |                                       |  |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.        |                                       |  |  |

| University: P. J. Šafá   | árik University in Košice                |   |  |  |
|--|--|---|--|--|
| Faculty: Faculty of S  | Faculty: Faculty of Science              |   |  |  |
| Course ID: ÚFV/<br>CDC/04  | Course name: Citation residence          | in scientific journal published in the country of |  |  |
| Course type, scope a<br>Course type:<br>Recommended cou<br>Per week: Per stud<br>Course method: pr | rse-load (hours):<br>dy period:<br>esent |   |  |  |
| Number of ECTS ci  | redits: 5                                |   |  |  |
| Recommended seme   | ester/trimester of the cou               | irse:   |  |  |
| Course level: III.   |  |   |  |  |
| Prerequisities:  |  |   |  |  |
| Conditions for cour  | se completion:                           |   |  |  |
| Learning outcomes:   |  |   |  |  |
| Brief outline of the   | course:                                  |   |  |  |
| Recommended litera   | ature:                                   |   |  |  |
| Course language:   |  |   |  |  |
| Notes:   |  |   |  |  |
| Course assessment Total number of asse   | essed students: 4                        |   |  |  |
|  | abs                                      | n   |  |  |
|  | 100.0                                    | 0.0   |  |  |
| Provides:  |  | ·   |  |  |
| Date of last modification  | ation:                                   |   |  |  |
| Approved: prof. RN   | Dr. Michal Hnatič, DrSc.                 |   |  |  |

| University: P. J. Šafá  | rik University in Koš                    | iice                                      |
|---|--|---|
| Faculty: Faculty of S   | Science                                  |   |
| Course ID: ÚFV/<br>SCI/04   | Course name: Citat                       | tion registered in Science Citation Index |
| Course type, scope a<br>Course type:<br>Recommended cou<br>Per week: Per stuc<br>Course method: pro | rse-load (hours):<br>ly period:<br>esent |   |
| Number of ECTS cr   | -1                                       |   |
| Recommended seme  | ester/trimester of the                   | e course:                                 |
| Course level: III.  |  |   |
| 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: 177                       |   |
|   | abs                                      | n   |
|   | 100.0                                    | 0.0                                       |
| Provides:   |  | ·   |
| Date of last modifica   | ation:                                   |   |
| Approved: prof. RN  | Dr. Michal Hnatič. Dr                    | rSc.                                      |

| University: P. J. Šafárik University in Košice  |  |          |  |
|---|--|----------|--|
| Faculty: Faculty of Science   |  |          |  |
| Course ID: ÚFV/<br>SMPR/04  | general and the second and the secon |          |  |
| 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:<br>esent   |          |  |
|   | eaus: 15<br>ester/trimester of the course  |          |  |
|   | ster/trimester of the cours  | <b>:</b> |  |
| Course level: III.  |  |          |  |
| Prerequisities:   |  |          |  |
| Conditions for cours  | se completion:   |          |  |
| Learning outcomes:  |  |          |  |
| Brief outline of the c  | ourse:   |          |  |
| Recommended litera  | nture:   |          |  |
| Course language:  |  |          |  |
| Notes:  |  |          |  |
| Course assessment Total number of asse  | ssed students: 95  |          |  |
|   | abs  | n        |  |
| 100.0 0.0   |  |          |  |
| Provides:   |  |          |  |
| Date of last modifica   | ntion:   |          |  |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc.   |          |  |

| University: P. J. Šafárik University in Košice   |                                 |  |  |  |
|--|---------------------------------|--|--|--|
| Faculty: Faculty of S  | Faculty: Faculty of Science     |  |  |  |
| Course ID: ÚFV/<br>SDPR/04   | Course name: Co-worker          | of project supported by national grant schemes |  |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period: |  |  |  |
| Number of ECTS cr  | edits: 2                        |  |  |  |
| Recommended seme   | ster/trimester of the cours     | e:   |  |  |
| Course level: III.   |                                 |  |  |  |
| Prerequisities:  |                                 |  |  |  |
| <b>Conditions for cours</b>  | e completion:                   |  |  |  |
| Learning outcomes:   |                                 |  |  |  |
| Brief outline of the c   | ourse:                          |  |  |  |
| Recommended litera   | iture:                          |  |  |  |
| Course language:   |                                 |  |  |  |
| Notes:   |                                 |  |  |  |
| Course assessment Total number of asse   | ssed students: 485              |  |  |  |
|  | abs                             | n  |  |  |
|  | 100.0                           | 0.0  |  |  |
| <b>Provides:</b>   |                                 |  |  |  |
| Date of last modifica  | tion:                           |  |  |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.        |  |  |  |

| University: P. J. Šafárik University in Košice   |  |                   |  |
|--|--|-------------------|--|
| Faculty: Faculty of S  | cience                                   |                   |  |
| Course ID: ÚFV/<br>ODZP/14   | Course name: Defence o                   | f Doctoral Thesis |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period:<br>esent |                   |  |
| Number of ECTS cr  | edits: 30                                |                   |  |
| Recommended seme   | ster/trimester of the cour               | se:               |  |
| Course level: III.   |  |                   |  |
| Prerequisities:  |  |                   |  |
| <b>Conditions for cours</b>  | se completion:                           |                   |  |
| Learning outcomes:   |  |                   |  |
| Brief outline of the c   | ourse:                                   |                   |  |
| Recommended litera   | iture:                                   |                   |  |
| Course language:   |  |                   |  |
| Notes:   |  |                   |  |
| Course assessment Total number of asses  | ssed students: 71                        |                   |  |
|  | N  | P                 |  |
|  | 0.0                                      | 100.0             |  |
| Provides:  |  |                   |  |
| Date of last modifica  | ntion: 03.05.2015                        |                   |  |
| <b>Approved:</b> prof. RNI   | Dr. Michal Hnatič, DrSc.                 |                   |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Dissertation examination DZS/14 Course type, scope and the method: **Course type:** Recommended course-load (hours): Per week: Per study period: Course method: present Number of ECTS credits: 20 Recommended semester/trimester of the course: Course level: III. **Prerequisities: Conditions for course completion:** Obtaining required number of credits as given by the study plan. **Learning outcomes:** Evaluation of competences of the student according to his/her scientific profile. **Brief outline of the course:** Presentation of the results in the thesis for disertation exam, responding to referee's comments, answering questions of exam committee. Two questions are selected subsequently from one compulsory and one optional subject, respectively. The subjects are selected by guarantee of the program according to the study plan and scientific profile of the student. The third question addresses the current state of work on dissertation thesis. **Recommended literature:** Course language: english **Notes:** Course assessment Total number of assessed students: 100 P N 0.0 100.0 **Provides:** Date of last modification: 03.05.2015

| University: P. J. Šafá  | rik University in Košice        |                        |     |
|---|---------------------------------|------------------------|-----|
| Faculty: Faculty of S   | cience                          |                        |     |
| Course ID: ÚFV/<br>VPBP/04  | Course name: Elaborat           | ion of reviewer report |     |
| 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 ECTS cr   | edits: 2                        |                        |     |
| Recommended seme  | ster/trimester of the co        | urse:                  |     |
| Course level: III.  |                                 |                        |     |
| Prerequisities:   |                                 |                        |     |
| Conditions for cours  | se completion:                  |                        |     |
| Learning outcomes:  |                                 |                        |     |
| Brief outline of the c  | ourse:                          |                        |     |
| Recommended litera  | nture:                          |                        |     |
| Course language:  |                                 |                        |     |
| Notes:  |                                 |                        |     |
| Course assessment Total number of asse  | ssed students: 19               |                        |     |
|   | abs                             |                        | n   |
|   | 100.0                           |                        | 0.0 |
| Provides:   |                                 |                        |     |
| Date of last modifica   | tion:                           |                        |     |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc.        |                        |     |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

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

AJD1/07

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 ECTS credits: 2** 

**Recommended semester/trimester of the course:** 1.

Course level: III.

**Prerequisities:** 

**Conditions for course completion:** 

Written assignments - professional CV, short academic biography (200-350 words).

distance mode of instruction using MS teams

**Learning outcomes:** 

**Brief outline of the course:** 

**Recommended literature:** 

Course language:

**Notes:** 

Course assessment

Total number of assessed students: 649

| N   | Ne  | P     | Pr  | abs   | neabs |
|-----|-----|-------|-----|-------|-------|
| 0.0 | 0.0 | 51.31 | 0.0 | 48.69 | 0.0   |

Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD.

Date of last modification: 11.02.2021

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

Course ID: CJP/ | Course name: English Language for PhD Students 2

AJD2/07

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 ECTS credits: 3** 

**Recommended semester/trimester of the course:** 2.

Course level: III.

**Prerequisities:** 

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

Distance mode of instruction. Online consultations.

Test, oral exam in accordance with the exam requirements (https://www.upjs.sk/filozoficka-fakulta/cjp/doktorandi-upjs/)

### **Learning outcomes:**

Development of students' language skills, improvement of students' linguistic competencies (selected aspects of English pronunciation, vocabulary and syntax), development of students's pragmatic competence (selected aspects of functional grammar) with focus on English for academic and specific purposes. B2/C1 level of lanuage competence (according to CEFR.)

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

Specific aspecs of academic and professional English with focus on vocabulary development (noun and verb collocations, phrasal verbs, prepositional phrases, word-formation, formal/informal language, etc.), selected aspects of English grammar (prepositions, grammar tenses, passive voice, etc.), selected functional grammar (expressing opinion, cause/effect, arguments, examples, etc.). Academic communication. Cross-language interference.

### Recommended literature:

Kolaříková, Z., Petruňová, H., Timková, R.: Angličtina v akademickom prostredí (cvičebnica). UPJŠ Košice, 2015

McCarthy, M., O'Dell, F.: Academic Vocabulary in Use. CUP, 2008

Štepánek, L., J. De Haff a kol.: Academic English-Akademická angličtina. Grada Publishing, a.s., 2011

Blašková, K.: Handbook of English for Postgraduate Students. Vyd. SPRINT Bratislava, 2007

Dušková, L. a kol.: Hovorová angličtina pre vedeckých a odborných pracovníkov. Veda.

Bratislava, 1982

Armer, T.: Cambridge English for Scientists. CUP, 2011

Porter, D.: Check your vocabulary for Academic English. Macmillan Publishers Limited, 2008

Oxford Collocations Dictionary for students of English. OUP, 2002

lms.upjs.sk

Course language:

## B2/C1 level according to CEFR

**Notes:** 

### **Course assessment**

Total number of assessed students: 607

| N    | Ne  | Р     | Pr   | abs  | neabs |
|------|-----|-------|------|------|-------|
| 0.33 | 0.0 | 92.59 | 1.32 | 5.77 | 0.0   |

Provides: PhDr. Helena Petruňová, CSc., Mgr. Zuzana Kolaříková, PhD.

**Date of last modification:** 10.02.2021

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: High energy astrophysics ASVE/15 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 ECTS credits: 5 Recommended semester/trimester of the course: 3. Course level: III. **Prerequisities: Conditions for course completion:** Seminar essay. Oral exam with preparation; 3 questions within the curriculum presented during the course. **Learning outcomes:** Become acquainted with the basics of high energy astrophysics. **Brief outline of the course:** Astrophysical mechanisms of the origin and properties of high energy photons in different types of cosmic objects: solar system bodies, active stellar coronae, supernova explosions and remnants, neutron stars, cataclysmic variable stars and X-ray binaries, active galactic nuclei, clusters of galaxies and gamma-ray bursts. Detection and analysis of X-rays and gamma rays. **Recommended literature:** 1. Melia, F., High-Energy Astrophysics, Princeton University Press, Princeton, 2009; 2. Lewin, W.H.G., van der Klis, M., Compact Stellar X-ray Sources, Cambridge University Press, Cambridge, 2006; 3. Longair, M. S., High Energy Astrophysics, Cambridge University Press, Cambridge, 2011; 4. Seward, F. D., Charles, P. A., Exploring the X-ray Universe, Cambridge University Press, Cambridge, 2010; Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 1 P N 0.0 100.0 Provides: doc. RNDr. Rudolf Gális, PhD.

Date of last modification: 26.09.2017

| University: P. J. Šafá   | rik University in Košice                 |                                    |
|--|--|------------------------------------|
| Faculty: Faculty of S  | cience                                   |                                    |
| Course ID: ÚFV/<br>DKZU/04   | Course name: Home Con                    | ference with Foreign Participation |
| Course type, scope a<br>Course type:<br>Recommended cour<br>Per week: Per stud<br>Course method: pre | rse-load (hours):<br>ly period:<br>esent |                                    |
| Number of ECTS cr  |  |                                    |
|  | ster/trimester of the cour               | se:                                |
| Course level: III.   | ,  |                                    |
| Prerequisities:  |  |                                    |
| Conditions for cours   | e completion:                            |                                    |
| Learning outcomes:   |  |                                    |
| Brief outline of the c   | ourse:                                   |                                    |
| Recommended litera   | iture:                                   |                                    |
| Course language:   |  |                                    |
| Notes:   |  |                                    |
| Course assessment Total number of asse   | ssed students: 293                       |                                    |
|  | abs                                      | n                                  |
|  | 100.0                                    | 0.0                                |
| Provides:  |  | •                                  |
| Date of last modifica  | tion:                                    |                                    |
| <b>Approved:</b> prof. RNI   | Dr. Michal Hnatič, DrSc.                 |                                    |

| University: P. J. Šafá   | rik University in Košice       |                 |  |
|--|--------------------------------|-----------------|--|
| Faculty: Faculty of S  | cience                         |                 |  |
| Course ID: ÚFV/<br>MK/04   | Course name: Internation       | onal Conference |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>y period: |                 |  |
| Number of ECTS cr  | edits: 6                       |                 |  |
| Recommended seme   | ster/trimester of the cou      | irse:           |  |
| Course level: III.   |                                |                 |  |
| 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 asse   | ssed students: 393             |                 |  |
|  | abs                            | n               |  |
| 100.0 0.0  |                                |                 |  |
| <b>Provides:</b>   |                                | •               |  |
| Date of last modifica  | tion:                          |                 |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.       |                 |  |

|  | COURSE INFORM   | MATION LETTER  |  |
|--|---|--|--|
| University: P. J. Šafá   | rik University in Košice  |  |  |
| Faculty: Faculty of S  | cience  |  |  |
| Course ID: ÚFV/<br>USMA/15   | Course name: Introduction   | n to standard model  |  |
| Course type, scope a<br>Course type: Lectur<br>Recommended cour<br>Per week: 2 Per stu<br>Course method: pre   | re<br>rse-load (hours):<br>dy period: 28  |  |  |
| Number of ECTS cr  | edits: 5  |  |  |
| Recommended seme   | ster/trimester of the cours   | e: 3.  |  |
| Course level: III.   |   |  |  |
| <b>Prerequisities:</b>   |   |  |  |
| Conditions for cours exam  | e completion:   |  |  |
| Learning outcomes: The aim of the course unified theory of electrons   |   | riented to the astrophysics, basic knowldges about   |  |
| of weak interaction w<br>2.Genesis of modern<br>starting from definition<br>intermediate bosons a  | gical point of view the lectural view beta-decay belongs. In electro-weak theory and on of V-A currents, choise of and Yang_Mils quantum field. | standard model is given by inductive method fappropriate calibration symmetry, corresponding lds and Higgs mechanism.  7- Weinberg-Salam standard model is proposed. |  |
| Recommended literature:  1. J. Hořejší: Introduction to electroweak unification (World Scientific, Singapore 1994); czech version: Elektroslabé sjednocení a stromová unitarita (Karolinum, Praha 1993).  2. P. Renton: Electroweak interactions (Cambridge Univ. Press, Cambridge 1990).  3. Francis Halzen, Alan D. Martin: Quarks and Leptons, John Wiley&Sons in russian: F.Helzen, A.D.Martin: Kvarki i leptoni, Mir, Moskva, 1987.  4. Cheng T.P., Li L.F.: Gauge theory of elementary particle Physics, Claredon Press, Oxford, 1984. |   |  |  |
| Course language:<br>Slovak, English  |   |  |  |
| Notes:   |   |  |  |
| Course assessment  | 1 . 1 2   |  |  |
| Total number of asses  |   | p  |  |
|  | N   | Г  |  |

0.0

0.0

| Provides: prof. RNDr. Michal Hnatič, DrSc. |
|--|
| Date of last modification: 03.05.2015      |
| Approved: prof. RNDr. Michal Hnatič, DrSc. |

| University: P. J. Šafá   | rik University in Košice        |                                       |
|--|---------------------------------|---------------------------------------|
| Faculty: Faculty of S  | cience                          |                                       |
| Course ID: ÚFV/<br>ZKC/04  | Course name: Journals R         | egistered by Current Contets Database |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period: |                                       |
| Number of ECTS cr  | edits: 20                       |                                       |
| Recommended seme   | ster/trimester of the cours     | se:                                   |
| Course level: III.   |                                 |                                       |
| Prerequisities:  |                                 |                                       |
| Conditions for cours   | e completion:                   |                                       |
| Learning outcomes:   |                                 |                                       |
| Brief outline of the c   | ourse:                          |                                       |
| Recommended litera   | iture:                          |                                       |
| Course language:   |                                 |                                       |
| Notes:   |                                 |                                       |
| Course assessment Total number of asse   | ssed students: 455              |                                       |
|  | abs                             | n                                     |
| 100.0 0.0  |                                 |                                       |
| <b>Provides:</b>   |                                 |                                       |
| Date of last modifica  | tion:                           |                                       |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.        |                                       |

| University: P. J. Šafá  | rik University in Košice                           |   |
|---|--|---|
| Faculty: Faculty of S   | cience   |   |
| Course ID: ÚFV/<br>ZNC/04   | Course name: Journals no database and published ab | et registered in the Current Contents Connect<br>coad |
| 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:<br>esent           |   |
| Number of ECTS cr   | edits: 5   |   |
| Recommended seme  | ster/trimester of the cours                        | se:   |
| Course level: III.  |  |   |
| Prerequisities:   |  |   |
| Conditions for cours  | se completion:                                     |   |
| Learning outcomes:  |  |   |
| Brief outline of the c  | ourse:   |   |
| Recommended litera  | nture:   |   |
| Course language:  |  |   |
| Notes:  |  |   |
| Course assessment Total number of asse  | ssed students: 49                                  |   |
|   | abs  | n   |
|   | 100.0  | 0.0   |
| Provides:   |  |   |
| Date of last modifica   | ntion:   |   |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc.                           |   |

| University: P. J. Šafá  | rik University in Košice  |    |  |
|---|---|----|--|
| Faculty: Faculty of S   | Science   |    |  |
| Course ID: ÚFV/<br>DNC/04   | Course name: Journals not registered in the Current Contents Connect database and published in the country of residence |    |  |
| 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:<br>esent  |    |  |
|   | ester/trimester of the cours  |    |  |
| Course level: III.  |   | 5• |  |
|   |   |    |  |
| Prerequisities:   |   |    |  |
| Conditions for cours  |   |    |  |
| Learning outcomes:  |   |    |  |
| Brief outline of the o  | course:   |    |  |
| Recommended litera  | ature:  |    |  |
| Course language:  |   |    |  |
| Notes:  |   |    |  |
| Course assessment Total number of asse  | essed students: 21  |    |  |
|   | abs   | n  |  |
| 100.0 0.0   |   |    |  |
| Provides:   |   |    |  |
| Date of last modifica   | ation:  |    |  |
| Approved: prof. RN  | Dr. Michal Hnatič, DrSc.  |    |  |

| University: P. J. Šafá   | irik University in Košice                       |  |
|--|---|--|
| Faculty: Faculty of S  | Science   |  |
| Course ID: ÚFV/<br>DKC/04  | Course name: Journals and published in the cour | egistered in the Current Contents Connect database atry of residence |
| Course type, scope a Course type: Recommended cou Per week: Per stue Course method: pr | rse-load (hours):<br>ly period:<br>esent        |  |
| Number of ECTS ci  |   |  |
|  | ester/trimester of the cou                      | rse:   |
| Course level: III.   |   |  |
| Prerequisities:  |   |  |
| Conditions for cour  | se completion:                                  |  |
| Learning outcomes:   |   |  |
| Brief outline of the   | course:   |  |
| Recommended liter  | ature:  |  |
| Course language:   |   |  |
| Notes:   |   |  |
| Course assessment Total number of asse   | essed students: 8                               |  |
|  | abs   | n  |
| 100.0 0.0  |   |  |
| Provides:  |   |  |
| Date of last modification  | ation:  |  |
| Approved: prof. RN   | Dr. Michal Hnatič, DrSc.                        |  |

| University: P. J. Šafá   | rik University in Košic                 | e             |  |
|--|---|---------------|--|
| Faculty: Faculty of S  | cience                                  |               |  |
| Course ID: ÚFV/<br>DK/04   | Course name: Nation                     | al Conference |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>y period:<br>esent |               |  |
| Number of ECTS cr  | edits: 2                                |               |  |
| Recommended seme   | ster/trimester of the c                 | ourse:        |  |
| Course level: III.   |   |               |  |
| 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 asse   | ssed students: 137                      |               |  |
|  | abs                                     | n             |  |
|  | 100.0                                   | 0.0           |  |
| <b>Provides:</b>   |   | <b>-</b>      |  |
| Date of last modifica  | tion:                                   |               |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSo                 | c.            |  |

| University: P. J. Šafá  | rik University in Košice   |     |  |
|---|--|-----|--|
| Faculty: Faculty of S   | cience   |     |  |
| Course ID: ÚFV/<br>NZ/04  | Course name: Non-reviewed collections of papers and monographs published abroad or in the country of residence |     |  |
| Course type, scope a Course type: Recommended cou Per week: Per stud Course method: pro | rse-load (hours):<br>ly period:<br>esent   |     |  |
| Number of ECTS cr   | -  |     |  |
|   | ster/trimester of the cours  | e:  |  |
| Course level: III.  |  |     |  |
| 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: 104   |     |  |
|   | abs  | n   |  |
|   | 100.0  | 0.0 |  |
| Provides:   |  |     |  |
| Date of last modifica   | ntion:   |     |  |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc.   |     |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Numerical methods of astrophysics NMAS/15 Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: 4 Per study period: 56 Course method: present **Number of ECTS credits: 8 Recommended semester/trimester of the course:** 3. Course level: III. **Prerequisities: Conditions for course completion: Learning outcomes:** Acquaint students about advanced numerical methods for solving of problems in astrophysics. **Brief outline of the course:** Monte-Carlo simulations in astrophysics, error determination of parameters. Simulation of mass transfer and accretion disks. N-body system dynamics. **Recommended literature:** 1. Press et. al.: 2002, Numerical Recipes in C.: Cambridge University Press 2. Robert & Cassela: 2005, Monte Carlo Statistical Methods, Springer manuals for packages NumPy, SciPy, PyKE, published papers Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 4 P N 0.0 100.0 Provides: doc. Mgr. Štefan Parimucha, PhD. Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: KPE/ Course name: Pedagogy for university teachers PgVU/17 Course type, scope and the method: Course type: Lecture Recommended course-load (hours): Per week: Per study period: 28s Course method: present **Number of ECTS 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: 32 abs neabs n 100.0 0.0 0.0 Provides: PaedDr. Renáta Orosová, PhD. Date of last modification: 12.02.2021 Approved: prof. RNDr. Michal Hnatič, DrSc.

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ **Course name:** Photometry FOTA/15 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 ECTS credits: 5 Recommended semester/trimester of the course: 1. Course level: III. **Prerequisities: Conditions for course completion:** oral exam and test **Learning outcomes:** inform students about advanced methods of astronomical photometry **Brief outline of the course:** Detection of objects, background determination. Aperture photometry, apertures optimization, profile fitting. PSF photometry. Image substraction method. Measurements calibration, removing systematic trends and errors. Transformation to international system. **Recommended literature:** 1. Budding & Demircan: 2007, Introduction to Astronomical Photometry, Cambridge University 2. Howell: 2000, Handbook of CCD Astronomy, Cambridge University Press 3. Lena et al.: 1996, Observational Astrophysics, Springer-Verlag 4. Martinez a Klotz: 1998, A practical giude to CCD Astronomy, Cambridge University Press. manuals to software packages, published papers and internet sources Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 5 P N 0.0 100.0 Provides: doc. Mgr. Štefan Parimucha, PhD. Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ **Course name:** Physics of the close binaries FTDV/15 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 ECTS credits: 5 **Recommended semester/trimester of the course:** 2. Course level: III. **Prerequisities: Conditions for course completion:** oral exam **Learning outcomes:** Obtaining knowledges about methods about close binaries research and their structure and evolution. **Brief outline of the course:** Kopal's classification of close binaries. Creation and evolution of close binaries. Physical processes in close binaries: mass transfer, outflow, tidal pulsations, accretion disks, mass flows. Methods of observations: photometry, spectroscopy, interferometry, polarimetry, Doppler thomography. Determination of orbital parameters and absolute parameters of bodies. **Recommended literature:** 1. Hilditch, R.W.: 2001, An introduction to Close binary Stars, Cambridge University Press 2. Kallrath, J., Milone, E.F.: 1999, Eclipsing Binary Stars, Springer Verlag 3. Richards, M.T., Hubeny, I. (eds.):2012, "From Interacting Binaries to Exoplanets: Essential Modeling Tools", proceedings of IAU Symposium 282, Cambridge University Press Course language: Slovak, English Notes: Course assessment Total number of assessed students: 0 P N 0.0 0.0 Provides: Mgr. Theodor Pribulla, CSc. Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Planetary systems PLSD/15 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 ECTS credits: 5 Recommended semester/trimester of the course: 2. Course level: III. **Prerequisities: Conditions for course completion:** exam **Learning outcomes:** Obtaining knowledges about methods of exoplanet searching and their physical properties. **Brief outline of the course:** Methods of exoplanets detection: transits, radial velocities, microlensing, direct imaging. Dynamic of exoplanets. Creation and evolution of exoplanets, evolution of protoplanetary discs. Atmosphere of exoplanets. **Recommended literature:** 1. Haswell: 2010, Transiting exoplanets, Cambridge University Press 2. Perryman: 2011, The exoplanet handbook, Cambridge University Press 3. Seager (eds.): 2010, Exoplanets, The University of Arizona Press, Tuscon Course language: Slovak, English Notes: Course assessment Total number of assessed students: 2 N P 0.0 100.0 Provides: Mgr. Martin Vaňko, PhD. Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Populations of the interplanetary bodies **PTMH/15** 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 ECTS credits: 5 Recommended semester/trimester of the course:** 1. Course level: III. **Prerequisities: Conditions for course completion:** Exam **Learning outcomes:** Obtaining detailed knowledges about populations of interplanetary matter. **Brief outline of the course:** Meteoroids flows, near-earth asteroids, new comets under Oort, Troians. Ice objects of Edgeworth-Kuiper belt: orbits physical properties, dynamical and physical evolution **Recommended literature:** 1. Bottke, Cellino, Paolicchi, Binzel,: 2002, Asteroids III, University of Arizona Press 2. Hawkes, Mann, Brown: 2005, Modern Meteor Science, Springer 3. Fernández, Lazzaro, Prialnik, Schulz: 2010, Icy Bodies of the Solar System, Cambridge **University Press** 4. Swamy: 2010, Physics of comets, World Scientific Course language: Slovak, English Notes: Course assessment Total number of assessed students: 0 N P 0.0 0.0 Provides: doc. RNDr. Ján Svoreň, DrSc. Date of last modification: 03.05.2015

| University: P. J. Šafá  | rik University in Koši                   | ce      |  |
|---|--|---------|--|
| Faculty: Faculty of S   | cience                                   |         |  |
| Course ID: ÚFV/<br>VYS/04   | Course name: Presentation in Seminar     |         |  |
| 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:<br>esent |         |  |
| Number of ECTS cr   | edits: 2                                 |         |  |
| Recommended seme  | ster/trimester of the                    | course: |  |
| Course level: III.  |  |         |  |
| 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: 345                       |         |  |
|   | abs                                      | n       |  |
|   | 100.0                                    | 0.0     |  |
| Provides:   |  |         |  |
| Date of last modifica   | ition:                                   |         |  |
| Approved: prof RNI  | Dr. Michal Hnatič. Dr.S                  | Sc      |  |

University: P. J. Šafárik University in Košice

Faculty: Faculty of Science

**Course name:** Psychology for University Lecturers

KPPaPZ/PsVU/17

Course type, scope and the method:

Course type: Lecture

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

Course method: present

**Number of ECTS credits: 5** 

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

Course level: III.

## **Prerequisities:**

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

Case study, micro-output, its analysis

Current modifications of the course for the semester 2020/2021 are listed in the electronic bulletin board of the course.

#### **Learning outcomes:**

Acquisition of psychological skills necessary for professional, competent performance of university teaching practice of doctoral students on the basis of acquisition and use of selected psychological knowledge from cognitive psychology, psychology of emotions and motivation, personality psychology, developmental, social, pedagogical psychology and health psychology. They will enable university teachers - doctoral students to understand the psychological interpretation of human development, upbringing and education. The acquired knowledge will enable better application in practice, are closely linked to practice and are based on current knowledge of the field.

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

University teacher and his work in the teaching process with a focus on:

teacher in relation to himself (cognitive, personality, social competencies and competencies in the use of methods), in relation to students and as part of the teacher-student relationship based on selected areas of cognitive psychology, psychology of emotions and motivation, developmental psychology, social psychology , educational psychology and health psychology with application to the university environment.

#### **Recommended literature:**

Alexitch, L. R. (2005). Applying social psychology to education. Social Psychology.–Ed.:

Schneider F., Gruman J., Coutts L.-Sage Publications, Inc, 205-228.

Fry, H., Ketteridge, S., & Marshall, S. (2008). A handbook for teaching and learning in higher education: Enhancing academic practice. Routledge.

Mareš, J.: Pedagogická psychologie. Portál, 2013.

Kniha psychologie. Universum, 2014

Čáp, J., Mareš, J.: Psychologie pro učitele. Praha: Portál 2007.

Vágnerová, M.: Školní poradenská psychológie pro pedagogy. Praha: Karolínum 2005.

Course language:

# Notes: Course assessment Total number of assessed students: 27 abs n neabs 100.0 0.0 0.0

**Provides:** Mgr. Marta Dobrowolska Kulanová, PhD., doc. PhDr. Beata Gajdošová, PhD., PhDr. Anna Janovská, PhD.

Date of last modification: 17.02.2021

**Notes:** 

| Course assessment                          |     |  |
|--|-----|--|
| Total number of assessed students: 0       |     |  |
| N P  |     |  |
| 0.0  | 0.0 |  |
| Provides: prof. RNDr. Michal Hnatič, DrSc. |     |  |
| Date of last modification: 03.05.2015      |     |  |
| Approved: prof. RNDr. Michal Hnatič, DrSc. |     |  |

| University: P. J. Šafá   | rik University in Košice       |          |  |
|--|--------------------------------|----------|--|
| Faculty: Faculty of S  | cience                         |          |  |
| Course ID: ÚFV/<br>RZ/04   |                                |          |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>y period: |          |  |
| Number of ECTS cr  | edits: 5                       |          |  |
| Recommended seme   | ster/trimester of the co       | urse:    |  |
| Course level: III.   |                                |          |  |
| 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: 219             |          |  |
|  | abs                            | n        |  |
|  | 100.0 0.0                      |          |  |
| Provides:  |                                | <u> </u> |  |
| Date of last modifica  | tion:                          |          |  |
| <b>Approved:</b> prof. RNI   | Dr. Michal Hnatič, DrSc.       |          |  |

| University: P. J. Šafá   | rik University in Košice                |       |  |
|--|---|-------|--|
| Faculty: Faculty of S  | cience                                  |       |  |
| Course ID: ÚFV/<br>SSOL/04   |   |       |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>y period:<br>esent |       |  |
| Number of ECTS cr  | edits: 2                                |       |  |
| Recommended seme   | ster/trimester of the co                | urse: |  |
| Course level: III.   |   |       |  |
| 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 asse   | ssed students: 180                      |       |  |
|  | N P                                     |       |  |
| 0.0 100.0  |   |       |  |
| <b>Provides:</b>   |   |       |  |
| Date of last modifica  | tion:                                   |       |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.                |       |  |

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ **Course name:** Seminar in Astrophysics SASTb/15 Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present **Number of ECTS credits: 3** Recommended semester/trimester of the course: 2. Course level: III. **Prerequisities: Conditions for course completion: Learning outcomes:** Acquaint students with actual problems of astronomy and astrophysics and presentation of own results. **Brief outline of the course:** Scientific seminar about problems of astronomy and astrophysics, problems of dissertation thesis. **Recommended literature:** Current papers in astronomical and astrophysical journals. Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 5 N P 0.0 100.0 Provides: doc. RNDr. Rudolf Gális, PhD., doc. Mgr. Štefan Parimucha, PhD.

Date of last modification: 26.09.2017

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Seminar in astrophysics SASTa/15 Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present **Number of ECTS credits: 3 Recommended semester/trimester of the course:** 1. Course level: III. **Prerequisities: Conditions for course completion: Learning outcomes:** Acquaint students with actual problems of astronomy and astrophysics and presentation of own results. **Brief outline of the course:** Scientific seminar about problems of astronomy and astrophysics, problems of dissertation thesis. **Recommended literature:** Current papers in astronomical and astrophysical journals. Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 5 N P 0.0 100.0 Provides: doc. RNDr. Rudolf Gális, PhD., doc. Mgr. Štefan Parimucha, PhD.

Date of last modification: 26.09.2017

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Seminar in astrophysics SASTc/15 Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present **Number of ECTS credits: 3** Recommended semester/trimester of the course: 3. Course level: III. **Prerequisities: Conditions for course completion: Learning outcomes:** Acquaint students with actual problems of astronomy and astrophysics and presentation of own results. **Brief outline of the course:** Scientific seminar about problems of astronomy and astrophysics, problems of dissertation thesis. **Recommended literature:** Current papers in astronomical and astrophysical journals. Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 5 N P 0.0 100.0 Provides: doc. RNDr. Rudolf Gális, PhD., doc. Mgr. Štefan Parimucha, PhD.

Date of last modification: 26.09.2017

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Seminar in astrophysics SASTd/15 Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: 3 Per study period: 42 Course method: present **Number of ECTS credits: 3** Recommended semester/trimester of the course: 4. Course level: III. **Prerequisities: Conditions for course completion: Learning outcomes:** Acquaint students with actual problems of astronomy and astrophysics and presentation of own results. **Brief outline of the course:** Scientific seminar about problems of astronomy and astrophysics, problems of dissertation thesis. **Recommended literature:** Current papers in astronomical and astrophysical journals. Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 5 N P 0.0 100.0 Provides: doc. RNDr. Rudolf Gális, PhD., doc. Mgr. Štefan Parimucha, PhD.

Date of last modification: 26.09.2017

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Solar activity SLAA/15 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 ECTS credits: 5 Recommended semester/trimester of the course: 2. Course level: III. **Prerequisities: Conditions for course completion:** exam **Learning outcomes:** Knowledges about physical properties of plasma in solar interior and atmosphere, about physics of active regions on the Sun and understanding of solar activity cycle. **Brief outline of the course:** Solar interior - solar activity cycles, Tachocline, solar atmosphere - energy transfer and radiation, magnetic field of the Sun and active regions, solar spots, eruptions, coronal mass ejections, Solar dynamics, Helioseismology **Recommended literature:** 1. Aschwanden Markus, Physics of the Solar Corona: An Introduction with Problems and Solutions, Springer, 2006 2. Priest, E.R.: Solar Magnetohydrodynamics, Reidel, 1982. 3. Stix M.: The Sun, An Introduction, Springer, 2nd edition, 2002. 4. Sturrock, Holzer, Mihalas, Ulrich, Physics of the Sun I. II. III. Geophysics and Astrophysics Monorgaphs, Riedel Publ. Dodrecht 1968 5. Zirin, H., Astrophysics of the Sun, Cambridge Univ. Press, Cambridge, 1988 Course language: Slovak, English **Notes:** Course assessment Total number of assessed students: 0 P N 0.0 0.0 Provides: RNDr. Aleš Kučera, CSc.

Date of last modification: 03.05.2015

University: P. J. Šafárik University in Košice Faculty: Faculty of Science Course ID: ÚFV/ Course name: Spectroscopy SPKD/15 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 ECTS credits: 5** Recommended semester/trimester of the course: 1. Course level: III. **Prerequisities: Conditions for course completion:** Seminar essay. Oral exam with preparation; 3 questions within the curriculum presented during the course. **Learning outcomes:** Become acquainted with the basics of acquisition, processing and analysis of stellar spectra. **Brief outline of the course:** Spectroscopic tools a detectors. The measurement and behaviour of stellar continua and spectral lines.

#### **Recommended literature:**

- 1. Gray, D.F., The observation and analysis of stellar photospheres, Cambridge University Press, Cambridge, 1992;
- 2. Böhm-Vitense, E., Introduction to stellar astrophysics, Stellar atmospheres, Cambridge University Press, Cambridge, 1997;
- 3. Kipenhahn, R., Weigert, A., Stellar Structure and evolution, Springer-Verlag, Berlin, 1990;

## Course language:

Slovak, English

#### **Notes:**

#### Course assessment

Total number of assessed students: 5

| N   | P     |
|-----|-------|
| 0.0 | 100.0 |

Provides: doc. RNDr. Rudolf Gális, PhD.

Date of last modification: 26.09.2017

| University: P. J. Šafá   | rik University in Košice                          |                      |   |
|--|---|----------------------|---|
| Faculty: Faculty of S  | cience  |                      |   |
| Course ID: Dek. PF<br>UPJŠ/JSD/14  | Course name: Spring Sch                           | ool for PhD Students |   |
| Course type, scope a<br>Course type: Lectur<br>Recommended cou<br>Per week: Per stud<br>Course method: pre | re<br>rse-load (hours):<br>ly period: 4d<br>esent |                      |   |
| Number of ECTS cr  | edits: 2  |                      |   |
| Recommended seme   | ster/trimester of the cours                       | e:                   |   |
| Course level: III.   |   |                      |   |
| Prerequisities:  |   |                      | _ |
| Conditions for cours   | se completion:                                    |                      |   |
| Learning outcomes:   |   |                      |   |
| Brief outline of the c   | ourse:  |                      |   |
| Recommended litera   | nture:  |                      |   |
| Course language:   |   |                      |   |
| Notes:   |   |                      |   |
| Course assessment Total number of asse   | ssed students: 154                                |                      |   |
|  | abs n   |                      |   |
|  | 100.0 0.0   |                      |   |
| <b>Provides:</b> prof. RND   | r. Katarína Cechlárová, DrS                       | c.                   |   |
| Date of last modifica  | ation: 03.05.2015                                 |                      |   |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.                          |                      |   |

| University: P. J. Šaf  | arik University in Košic   | ee      |     |  |
|--|--|---------|-----|--|
| Faculty: Faculty of  | Science  |         |     |  |
| Course ID: ÚFV/<br>ZSP/04  | and the second s |         |     |  |
| Course type, scope<br>Course type:<br>Recommended con<br>Per week: Per stu<br>Course method: p | urse-load (hours): dy period: resent   |         |     |  |
| Number of ECTS c   |  |         |     |  |
|  | ester/trimester of the c   | course: |     |  |
| Course level: III.   |  |         |     |  |
| Prerequisities:  |  |         |     |  |
| Conditions for cour  | rse completion:  |         |     |  |
| Learning outcomes  | :  |         |     |  |
| Brief outline of the   | course:  |         |     |  |
| Recommended liter  | rature:  |         |     |  |
| Course language:   |  |         |     |  |
| Notes:   |  |         |     |  |
| Course assessment<br>Total number of ass   | essed students: 258  |         |     |  |
|  | abs  |         | n   |  |
|  | 100.0  |         | 0.0 |  |
| Provides:  |  | ·       |     |  |
| Date of last modific   | cation:  |         |     |  |
| Approved: prof. RN   | JDr. Michal Hnatič, DrS  | c.      |     |  |

| <b>University:</b> P. J. Šaf  | arik University in Košice            |      |  |
|---|--------------------------------------|------|--|
| Faculty: Faculty of   | Science                              |      |  |
| Course ID: ÚFV/<br>VPSV/04  |                                      |      |  |
| Course type, scope<br>Course type:<br>Recommended co<br>Per week: Per stu<br>Course method: p | urse-load (hours): dy period: resent |      |  |
| Number of ECTS of   |                                      |      |  |
|   | ester/trimester of the cou           | rse: |  |
| Course level: III.  |                                      |      |  |
| Prerequisities:   |                                      |      |  |
| Conditions for cou  | rse completion:                      |      |  |
| Learning outcomes   | :                                    |      |  |
| Brief outline of the  | course:                              |      |  |
| Recommended liter   | rature:                              |      |  |
| Course language:  |                                      |      |  |
| Notes:  |                                      |      |  |
| Course assessment Total number of ass   | essed students: 16                   |      |  |
|   | abs                                  |      |  |
|   | 100.0 0.0                            |      |  |
| Provides:   |                                      | ·    |  |
| Date of last modific  | cation:                              |      |  |
| Approved: prof. RN  | JDr. Michal Hnatič, DrSc.            |      |  |

| University: P. J. Šafá   | rik University in Košice                |  |  |
|--|---|--|--|
| Faculty: Faculty of S  | cience                                  |  |  |
| Course ID: ÚFV/<br>VBP/04  | T                                       |  |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>y period:<br>esent |  |  |
| Number of ECTS cr  | edits: 6                                |  |  |
| Recommended seme   | ster/trimester of the cou               | rse:   |  |
| Course level: III.   |   |  |  |
| Prerequisities:  |   |  |  |
| <b>Conditions for cours</b>  | e completion:                           |  |  |
| Learning outcomes:   |   |  |  |
| Brief outline of the c   | ourse:                                  |  |  |
| Recommended litera   | iture:                                  |  |  |
| Course language:   |   |  |  |
| Notes:   |   |  |  |
| Course assessment Total number of asse   | ssed students: 38                       |  |  |
|  | abs                                     | n  |  |
|  | 100.0 0.0                               |  |  |
| Provides:  |   | <u>.                                      </u> |  |
| Date of last modifica  | tion:                                   |  |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.                |  |  |

| University: P. J. Šafá   | rik University in Košice                 |       |  |
|--|--|-------|--|
| Faculty: Faculty of S  | cience                                   |       |  |
| Course ID: ÚFV/<br>PPC/04  | 8  |       |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period:<br>esent |       |  |
| Number of ECTS cr  | edits: 1                                 |       |  |
| Recommended seme   | ster/trimester of the co                 | urse: |  |
| Course level: III.   |  |       |  |
| Prerequisities:  |  |       |  |
| Conditions for cours   | e completion:                            |       |  |
| Learning outcomes:   |  |       |  |
| Brief outline of the c   | ourse:                                   |       |  |
| Recommended litera   | iture:                                   |       |  |
| Course language:   |  |       |  |
| Notes:   |  |       |  |
| Course assessment Total number of asse   | ssed students: 238                       |       |  |
|  | abs                                      |       |  |
|  | 100.0 0.0                                |       |  |
| Provides:  |  |       |  |
| Date of last modifica  | tion:                                    |       |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.                 |       |  |

| University: P. J. Šafá  | rik University in Košice        | ,      |   |
|---|---------------------------------|--------|---|
| Faculty: Faculty of S   | cience                          |        |   |
| Course ID: ÚFV/<br>PPC/04   |                                 |        |   |
| 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 ECTS cr   | edits: 1                        |        |   |
| Recommended seme  | ster/trimester of the co        | ourse: |   |
| Course level: III.  |                                 |        |   |
| 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: 238              |        |   |
| abs   |                                 |        |   |
|   | 100.0 0.0                       |        |   |
| Provides:   |                                 | -      | _ |
| Date of last modifica   | ntion:                          |        |   |
| Approved: prof. RNI   | Dr. Michal Hnatič, DrSc         |        |   |

| University: P. J. Šafá   | rik University in Košice                  |     |  |
|--|---|-----|--|
| Faculty: Faculty of S  | cience                                    |     |  |
| Course ID: ÚFV/<br>POVK/04   | 5. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. |     |  |
| Course type, scope a Course type: Recommended cour Per week: Per stud Course method: pre | rse-load (hours):<br>ly period:           |     |  |
| Number of ECTS cr  | edits: 2                                  |     |  |
| Recommended seme   | ster/trimester of the cours               | e:  |  |
| Course level: III.   |   |     |  |
| Prerequisities:  |   |     |  |
| <b>Conditions for cours</b>  | se completion:                            |     |  |
| Learning outcomes:   |   |     |  |
| Brief outline of the c   | ourse:                                    |     |  |
| Recommended litera   | nture:                                    |     |  |
| Course language:   |   |     |  |
| Notes:   |   |     |  |
| Course assessment Total number of asse   | ssed students: 94                         |     |  |
|  | abs                                       | n   |  |
|  | 100.0                                     | 0.0 |  |
| <b>Provides:</b>   |   |     |  |
| Date of last modifica  | tion:                                     |     |  |
| Approved: prof. RNI  | Dr. Michal Hnatič, DrSc.                  |     |  |

| University: P. J. Šafá  | rik University in Košice               |       |  |
|---|--|-------|--|
| Faculty: Faculty of Science   |  |       |  |
| Course ID: ÚFV/<br>PDS/18   | 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 ECTS credits: 0   |  |       |  |
| 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: 22   |  |       |  |
|   | N                                      | P     |  |
|   | 0.0                                    | 100.0 |  |
| Provides:   |  | •     |  |
| Date of last modification:  |  |       |  |
| Approved: prof RNDr Michal Hnatič DrSc  |  |       |  |