University: P. J. Ša	afárik Universi	y in Košice			
Faculty: Faculty o	f Science				
Course ID: KFaD AFS/05	F/ Course nai	ne: Ancient Ph	ilosophy and Pre	esent Times	
Course type, scop Course type: Prac Recommended co Per week: 2 Per s Course method:	ctice ourse-load (ho study period: 2	urs):			
Number of credits	s: 2				
Recommended ser	mester/trimest	er of the cours	<b>e:</b> 2.		
Course level: II.					
Prerequisities:					
Conditions for cou	urse completio	n:			
Learning outcome	25:				
Brief outline of th	e course:				
Recommended lite	erature:				
Course language:					
<b>Course assessmen</b> Total number of as		s: 31			
A	В	С	D	Е	FX
80.65	6.45	6.45	0.0	6.45	0.0
Provides: Doc. Ph	Dr. Peter Nezni	k, CSc.	1	J	
Date of last modif	ication: 31.08.	2017			
Approved: Guarar	nteeprof. RNDr	Stanislav Voka	ál. DrSc.		

University: P. J.	Šafárik Univers	sity in Košice					
Faculty: Faculty	of Science						
Course ID: ÚFV AJF1/08	V/ Course name: Applied Nuclear Physics						
Course type, sco Course type: L Recommended Per week: 2 Pe Course methoo	ecture course-load (h r study period	iours):					
Number of cred	its: 4						
Recommended :	semester/trime	ster of the cours	e: 3.				
Course level: II.							
Prerequisities:							
<b>Conditions for c</b> term project examination	course complet	ion:					
<b>Learning outco</b> Overview of pos		ns of nuclear rad	ation.				
Biological effect	adiation with m ts of radiation, r		ts, basics for lim	diation, new tren its of exposure. N ysis.			
Ltd. 2003	andle K., Sokh	y, An Introduction		e environment, J.V , Systems, and Ap	2		
Course languag slovak and engli							
<b>Course assessm</b> Total number of		nts: 9					
	В	C	D	Е	FX		
A			0.0	0.0			
A 66.67	22.22	11.11	0.0	0.0	0.0		
66.67			0.0	0.0	0.0		
	NDr. Janka Vrl	áková, PhD.	0.0	0.0	0.0		

	Safárik Univers	sity in Košice					
Faculty: Faculty	of Science						
<b>Course ID:</b> ÚFV CUVE/13	ÚFV/ Course name: Ultra High Energy Particles						
Course type, sco Course type: Le Recommended Per week: 2 Per Course method	ecture course-load (h r study period:	ours):					
Number of credi	ts: 3						
Recommended s	emester/trimes	ster of the cour	se: 1.				
Course level: II.							
Prerequisities:							
Conditions for co	ourse completi	on:					
observation, the	principal of mea	asurement, actua	ys. The lectures was all and future expension will observe	riments, especial	lly JEM-EUSO		
observation, the p experiment (the f Station). The fina galactic and inter	principal of mea first space-based al lectures will a galactic space a	asurement, actua d experiment, w review the princ		riments, especial from the Interna pagation and acce	lly JEM-EUSO tional Space		
observation, the p experiment (the f Station). The fina galactic and inter <b>Brief outline of t</b>	principal of mea first space-based al lectures will r galactic space a he course:	asurement, actua d experiment, w review the princ	al and future expendent which will observe wiples of their prop	riments, especial from the Interna pagation and acce	lly JEM-EUSO tional Space		
observation, the j experiment (the f Station). The fina galactic and inter <b>Brief outline of t</b> <b>Recommended li</b> Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ	principal of mea first space-based al lectures will f galactic space a <b>he course:</b> <b>iterature:</b> arth, P.K.F. Gri lowers, P.K.F. O mission, New J uso.riken.jp gy Cosmic Rays	asurement, actua d experiment, w review the princ and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi	al and future expe hich will observe siples of their prop sible sources of or	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida		
observation, the p experiment (the f Station). The fina galactic and inter <b>Brief outline of t</b> <b>Recommended li</b> Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa	principal of mea first space-based al lectures will a galactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri owers, P.K.F. Gri owers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extre	asurement, actua d experiment, w review the princ and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi	al and future expension will observe siples of their prop sible sources of or cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Is pagation, Todor S	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida		
observation, the p experiment (the f Station). The fina galactic and inter <b>Brief outline of t</b> <b>Recommended li</b> Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa ph/9811011 <b>Course language</b> <b>Course assessme</b>	principal of mea first space-based al lectures will f galactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri lowers, P.K.F. Gri lowers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extre	asurement, actua d experiment, w review the princ and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi s: origin and pro mely High Ener	al and future expension will observe siples of their prop sible sources of or cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Is pagation, Todor S	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida		
observation, the p experiment (the f Station). The fina galactic and inter Brief outline of t Recommended li Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa ph/9811011 Course language	principal of mea first space-based al lectures will f galactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri lowers, P.K.F. Gri lowers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extre	asurement, actua d experiment, w review the princ and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi s: origin and pro mely High Ener	al and future expension will observe siples of their prop sible sources of or cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Is pagation, Todor S	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida		
observation, the p experiment (the f Station). The fina galactic and inter Brief outline of t Recommended li Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa ph/9811011 Course language Course assessme Total number of a	principal of mea first space-based al lectures will a rgalactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri owers, P.K.F. Gri owers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extre <b>e:</b> <b>ent</b> assessed studen	asurement, actua d experiment, w review the prince and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi s: origin and pro mely High Ener	al and future expension which will observe sibles of their prop sible sources of or cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Is pagation, Todor S rgy Cosmic Rays,	riments, especial from the Interna pagation and acce igin. eidelberg 2010 sue 6, pp. 065009 stanev, ICRC'07 I P.Bhattacharjee,	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida arXiv:astro-		
observation, the p experiment (the f Station). The fina galactic and inter Brief outline of t Recommended li Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa ph/9811011 Course language Course assessme Total number of a A 100.0	principal of mea first space-based al lectures will fir galactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri lowers, P.K.F. Gri lowers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extree <b>e:</b> <b>ent</b> assessed studen B 0.0	asurement, actua d experiment, w review the prince and discuss posse eder, Elsevier S Grieder, Springer Journal of Physi s: origin and pro mely High Ener tts: 3 C 0.0	al and future expension will observe sibles of their proposible sources of or cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Is pagation, Todor S rgy Cosmic Rays,	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009 stanev, ICRC'07 I P.Bhattacharjee, E 0.0	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida arXiv:astro- FX 0.0		
observation, the p experiment (the f Station). The fina galactic and inter Brief outline of t Recommended li Cosmic rays at E Extensive Air Sh The JEM-EUSO Web: http://jemen Ultra High Energ Origin and Propa ph/9811011 Course language Course assessme Total number of a A 100.0	principal of mea first space-based al lectures will a rgalactic space a <b>the course:</b> <b>iterature:</b> arth, P.K.F. Gri owers, P.K.F. Gri owers, P.K.F. C mission, New J uso.riken.jp gy Cosmic Rays agation of Extre <b>e:</b> <b>ent</b> assessed studen B 0.0 Pavol Bobik, P	asurement, actua d experiment, w review the prince and discuss poss eder, Elsevier S Grieder, Springer Journal of Physi s: origin and pro mely High Ener tts: 3 C 0.0 PhD., RNDr. Ma	al and future expension which will observe siples of their proposition cience B.V. 2001 r-Verlag Berlin He cs, Volume 11, Ist pagation, Todor S rgy Cosmic Rays, D 0.0	riments, especial from the Interna bagation and acce igin. eidelberg 2010 sue 6, pp. 065009 stanev, ICRC'07 I P.Bhattacharjee, E 0.0	Ily JEM-EUSO ational Space eleration in 9, 2009 Merida arXiv:astro- FX 0.0		

	rik University in Košice
Faculty: Faculty of S	cience
<b>Course ID:</b> ÚFV/ DEJ1/99	Course name: History of Physics
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pre	re rse-load (hours): Idy period: 28
Number of credits: 2	2
Recommended seme	ster/trimester of the course: 2.
Course level: I., II.	
Prerequisities:	
<b>Conditions for cours</b> written test and thesis exam	•
<b>Learning outcomes:</b> Basic facts in the hist	tory of physics.
world. Evolution and evolution of the theor and their application.	<b>course:</b> dge before Galileo. Evolution of physics within the mechanical picture of the d limits of classical physics, phase of breakthrough in physics. Origin and cy of relativity. Quantum physics and prospects of further evolution of physics . Contemporary state of physical research and its application in technology philosophy. Position of physics in our society.
<ol> <li>V.Malíšek: Co víte</li> <li>I.Kraus, Fyzika v k</li> <li>Praha, 2006.</li> <li>A.I.Abramov: Istor</li> <li>L.I.Ponomarev: Po</li> <li>I.Kraus, Fyzika v k</li> <li>ČVUT, Praha, 2007.</li> <li>I.Kraus, Fyzika od</li> <li>I.Štoll, Dějiny fyzit</li> <li>www-pages.</li> </ol>	n: Dejiny fyziky, skriptá, MFF UK, Bratislava, 1982. e o dějinách fyziky, Horizont, Praha, 1986. kulturních dějinách Evropy, Starověk a středověk, Nakladatelství ČVUT, ria jadernoj fiziky, KomKniga, Moskva, 2006. od znakom kvanta, Fizmatlit, Moskva, 2006. kulturních dějinách Evropy, Od Leonarda ke Goethovi, Nakladatelství Thaléta k Newtonovi, Academia, Praha, 2007. ky, Prometheus, Praha, 2009. rvest of a century, Discoveries of modern physics in 100 episodes, Oxford,
Course language:	

А	В	С	D	Е	FX				
83.33	8.33	8.33	0.0	0.0	0.0				
<b>Provides:</b> prof.	Provides: prof. RNDr. Stanislav Vokál, DrSc.								
Date of last mo	Date of last modification: 26.09.2017								
Approved: Gua	Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.								

University: P. J.	Safárik Univers	ity in Kosice			
Faculty: Faculty	v of Science				
<b>Course ID:</b> KFa DF2p/03	DF/ Course na	me: History of	Philosophy 2 (Ge	eneral Introductio	on)
Recommended	Lecture / Practice l course-load (h Per study perio	ours):			
Number of cred	lits: 4				
Recommended	semester/trimes	ster of the cours	se:		
Course level: I.,	II.				
Prerequisities:					
Conditions for o	course completi	on:			
Learning outco	mes:				
Brief outline of	the course:				
Recommended	literature:				
Course languag	je:				
Course assessm Total number of	ent assessed studen	ts: 738			
A	В	С	D	Е	FX
60.84	13.82	12.6	8.67	3.39	0.68
Provides: doc. F Katarína Mayero		· · ·		eter Nezník, CSc	c., PhDr.
Date of last mo	dification: 31.08	3.2017			
Annroved. Cue	rantaanraf PND	r. Stanislav Vok	ál DrSc		

University: P. J. Ša	fárik Universi	ty in Košice						
Faculty: Faculty of	Science							
<b>Course ID:</b> ÚFV/ DPO/14								
Course type, scope Course type: Recommended co Per week: Per st Course method: p	ourse-load (ho udy period:							
Number of credits	: 20							
Recommended sen	nester/trimest	er of the cours	se:					
Course level: II.								
Prerequisities:								
Conditions for cou	rse completio	n:						
Learning outcome	s:							
Brief outline of the	e course:							
Recommended lite	erature:							
Course language:								
<b>Course assessment</b> Total number of as		s: 43						
A	В	С	D	Е	FX			
67.44	20.93	9.3	2.33	0.0	0.0			
Provides:								
Date of last modifi	cation: 26.09.	2017						
Approved: Guaran	teeprof. RNDr	. Stanislav Vok	ál, DrSc.					

University: P. J	. Šafárik Unive	ersity in Košice						
Faculty: Facult	y of Science							
<b>Course ID:</b> ÚF EJF1a/04	1 5							
Course type, sc Course type: 1 Recommended Per week: 4 / 7 Course metho	Lecture / Pract d course-load 1 Per study pe	ice (hours):						
Number of cree	dits: 8							
Recommended	semester/trin	nester of the cours	e: 3.					
Course level: II	[.							
Prerequisities:								
<b>Conditions for</b> thesis exam	course compl	etion:						
-	nowledges of	the principles of pa ics in subnuclear pl	,	, construction of la	arge detectors			
chambers, MW (pixels/strips). Methods of phy coordinates, pa flight). Calo target and collid	construction of PC. Drift chan Scintilators and ysical quantitie ths, angles, m rimetry, electr der experiment	f particle detectors: hbers, TPC. Special d photodetectors. es measurement: Ve omenta). Charged p omagnetic and had s. ubnuclear physics (	types of gas detectors. particle identifier on calorimete	etectors, MSGC. S Track detectors (i ication (ionisation ers. Large detector	Silicon detectors measurement of losses, time of systems, fixed			
Grupen C.: Part Kleinknecht K. Bartke J.: Introd	oduction to ex ticle detectors, : Detectors for	perimental particle Cambridge, 1996 particle radiation, ( tivistic Heavy Ion	Cambridge, 198	36.	ing Singapore			
2009.					iing, bingapore,			
Course languages slovak and engl	-				inig, Singupore,			
Course languag slovak and engl Course assessm	lish nent	ents: 21			, Singupore,			
Course languages slovak and engli	lish nent	ents: 21	D	E	FX			

Provides: doc. RNDr. Adela Kravčáková, PhD.

Date of last modification: 26.09.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

	. Safárik Univer	rsity in Košice					
Faculty: Facult	y of Science						
Course ID: ÚF FEC1/04	V/ Course name: Elementary Particle Physics						
Recommende	Lecture / Practic d course-load () 2 Per study per	e hours):					
Number of crea	lits: 8						
Recommended	semester/trime	ester of the cours	e: 1.				
Course level: II	•						
Prerequisities:							
Conditions for	course complet	tion:					
Learning outco To obtain basic quantum chrom	knowledge of p	particle physics w	nich is necessary	for quantum fiel	d theory and		
Definition, sou		tion of elementa	<b>5</b> 1 ,		, ,		
Definition, sou discoveries of e dynamics, elect laws, parity, cha	rces and detect lementary partic romagnetic inte arge conjugation	etion of elementa cles, basic experim eraction, strong an h, CP symmetry, e Standard Model.	nents, quark mod d weak interaction	el, particle classi on, symmetries a	fication, particle nd conservation		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and	rces and detect lementary partic romagnetic inte arge conjugation sics beyond the f literature: Introduction to El 1-2 troduction to El 1-88021-3 d G. Shaw: Part ntroduction to El	cles, basic experim eraction, strong an n, CP symmetry, e	hents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293-	fication, particle nd conservation al and combined Press, 2008,		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196	rces and detect lementary partic romagnetic inte arge conjugation sics beyond the <b>literature:</b> Introduction to El 1-2 troduction to El 1-88021-3 d G. Shaw: Part ntroduction to H 50	cles, basic experimeraction, strong and n, CP symmetry, e Standard Model. Elementary Particle lementary Particle icle Physcis, Wile	hents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293-	fication, particle nd conservation al and combined Press, 2008,		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196 <b>Course languag</b>	rces and detect lementary partic romagnetic inte arge conjugation sics beyond the <b>literature:</b> Introduction to El 1-88021-3 d G. Shaw: Part ntroduction to H 50 ge:	eles, basic experimeraction, strong an n, CP symmetry, e Standard Model. Elementary Particle lementary Particle icle Physcis, Wile High Energy Phys	hents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293-	fication, particle nd conservation al and combined Press, 2008,		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196 <b>Course languag</b>	rces and detect lementary partic romagnetic inter arge conjugation sics beyond the f literature: Introduction to El 1-88021-3 d G. Shaw: Part ntroduction to H 50 ge: ment	eles, basic experimeraction, strong an n, CP symmetry, e Standard Model. Elementary Particle lementary Particle icle Physcis, Wile High Energy Phys	hents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293-	fication, particle nd conservation al and combined Press, 2008,		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196 <b>Course languag</b> <b>Course assessm</b> Total number of	rces and detect lementary partic romagnetic inter arge conjugation sics beyond the literature: Introduction to El 1-2 stroduction to El 1-88021-3 d G. Shaw: Part ntroduction to H 50 ge: nent f assessed stude	cles, basic experimeraction, strong and and and constraint of the symmetry, elementary Particle lementary Particle icle Physcis, Wile High Energy Physical structure of the stru	enents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9 ics, Cambridge U	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293- Jniversity Press, 2	fication, particle nd conservation al and combined Press, 2008, 0 2000, ISBN		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196 <b>Course languag</b> <b>Course assessm</b> Total number of A 42.86	rces and detect lementary partic romagnetic inter arge conjugation sics beyond the f literature: Introduction to El 1-2 stroduction to El 1-88021-3 d G. Shaw: Part introduction to H 50 ge: nent f assessed stude B 38.1	cles, basic experimeraction, strong and h, CP symmetry, e Standard Model. Elementary Particle lementary Particle icle Physcis, Wile High Energy Physis	Phents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9 ics, Cambridge U	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293- Jniversity Press, 2	fication, particle nd conservation al and combined Press, 2008, 0 2000, ISBN		
Definition, sou discoveries of e dynamics, elect laws, parity, cha symmetry, phys <b>Recommended</b> 1. D. Griffiths: 978-3-527-4060 2. A. Bettini: In ISBN 978-0-52 3. B. Martin and 4. D. Perkins: In 978-052162196 <b>Course languag</b> <b>Course assessm</b> Total number of A	rces and detect lementary partic romagnetic inter arge conjugation sics beyond the f literature: Introduction to El 1-2 stroduction to El 1-88021-3 d G. Shaw: Part ntroduction to H 50 ge: nent f assessed stude B 38.1 RNDr. Marek B	eles, basic experimeraction, strong and h, CP symmetry, e Standard Model. Elementary Particle lementary Particle lementary Particle icle Physcis, Wile High Energy Physical endergy Physical endergy Physical energy Physical endergy P	Phents, quark mod d weak interaction xperiments with eles, Wiley-VCH Physics, Cambr ey, 2008, ISBN 9 ics, Cambridge U	el, particle classi on, symmetries a violation of spatia , 2008, ISBN idge University I 78-0-470-03293- Jniversity Press, 2	fication, particle nd conservation al and combined Press, 2008, 0 2000, ISBN		

University: P. J. S	Šafárik Univers	ity in Košice						
Faculty: Faculty	of Science							
<b>Course ID:</b> ÚFV FJA1/14	Course na	Course name: Physics of the Nucleus						
Course type, sco Course type: La Recommended Per week: 2 Per Course method	ecture course-load (h r study period:	ours):						
Number of credi	its: 4							
Recommended s	emester/trimes	ster of the cours	<b>e:</b> 1.					
Course level: II.								
Prerequisities:								
Conditions for c	ourse completi	on:						
Learning outcon	nes:							
density distribution of nuclei. Quadru and isospin. Nuc	of nucleus. Nu on of nuclear ma upole electric m lear forces. Ten	atter. Nuclear moto	mentum and par y of deuteron.	nuclear stability. ity. Spin and magr Theory of scatterin Iodels of atomic r	netic momentum ng. Nuclear spir			
Recommended la Preston M.A., Pl		ucleus, Addison-	Wesley Publish	ing Company, 196	52			
Course language	2.							
Course assessme Total number of		ts: 44						
Α	В	С	D	E	FX			
59.09	15.91	11.36	9.09	4.55	0.0			
Provides: doc. R	NDr. Jozef Urba	án, CSc.	1	<u> </u>				
	:fination 26.00	0.2017						
Date of last mod	<b>incation:</b> 20.09	.2017						

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> KFal IH2/03	DF/ <b>Course na</b>	me: Idea Huma	nitas 2 (General 1	Introduction)	
Course type, sco Course type: Pr Recommended Per week: 2 Per Course method	ractice course-load (he r study period: : present	ours):			
Number of credi					
Recommended s	emester/trimes	ter of the cours	e: 3.		
Course level: II.					
Prerequisities:					
Conditions for c	ourse completi	on:			
Learning outcon	nes:				
Brief outline of t	the course:				
Recommended l	iterature:				
Course language	2:				
Course assessme Total number of		ts: 8			
Α	В	С	D	Е	FX
87.5	12.5	0.0	0.0	0.0	0.0
Provides: Doc. P	hDr. Peter Nezr	ník, CSc.	•	<u> </u>	
Date of last mod	ification: 31.08	.2017			
Approved: Guara	anteeprof. RND	r. Stanislav Voka	ál, DrSc.		

University: P. J. Š	afárik Univers	ity in Košice			
Faculty: Faculty of	of Science				
<b>Course ID:</b> ÚFV/ JADF/14	Course na	me: Nuclear Phy	ysics		
Course type, scop Course type: Recommended c Per week: Per s Course method:	course-load (he tudy period:				
Number of credit	s: 4				
Recommended se	mester/trimes	ter of the cours	e:		
Course level: II.					
<b>Prerequisities:</b> Úl ÚFV/KTP1b/03	FV/FEC1/04 ar	nd ÚFV/EJF1a/0	4 and ÚFV/FJA	1/14 and ÚFV/K	FP1a/03 and
Conditions for co	urse completi	on:			
Learning outcom	es:				
Brief outline of th	ne course:				
Recommended lit	terature:				
Course language:					
<b>Course assessmen</b> Total number of a	-	ts: 7			
A	В	С	D	Е	FX
85.71	14.29	0.0	0.0	0.0	0.0
Provides:				•	
Date of last modi	fication: 26.09	.2017			
Approved: Guara	nteeprof. RND	r. Stanislav Voká	l, DrSc.		

University: P. J. S	Šafárik Universi	ty in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚFV JRE1/14	Course na	me: Nuclear Re	eactions		
Course type, sco Course type: Le Recommended Per week: 2 Per Course method	ecture course-load (ho study period:	ours):			
Number of credi	ts: 4				
Recommended s	emester/trimes	ter of the cours	se: 2.		
Course level: II.					
Prerequisities:					
<b>Conditions for co</b> Term project Examination	ourse completio	on:			
Learning outcon Introduction to n					
Introduction to n Mechanism of nu nuclear reactions approximation. P Neutron physics. synthesis. Fusion in medicine.	uclear reactions s, compound nu re-compound m . Neutron induc	Direct nuclea acleus. Plane w odel of nuclear ced reactions. I	r reactions. Reso vave Born appro- reactions: cassad Heavy ion reaction	nance reactions. ximation. Distor e model, exciton ons. Gamma rea	Bohr model of ted wave Born model, fireball. actions. Nuclear
Recommended li 1. Bertulani C.A. 2. G. McCracken 3. P.A.Tipler, R.A	, Danielewicz P. , P. Stott: Fusior	n, The Energy o		lsevier 2005	-
Course language slovak and englis					
<b>Course assessme</b> Total number of a		s: 14			
А	В	С	D	Е	FX
64.29	28.57	0.0	7.14	0.0	0.0
Provides: doc. R	NDr. Janka Vrlá	ková, PhD.		I	
Date of last mod	···· • • • • • • • • • • • • • • • • •	2017			
Pare of fast mou	ification: 26.09.	.2017			

University: P. J. Š	Safárik Universit	y in Košice			
Faculty: Faculty	of Science				
Course ID: KFaE KDF/05		<b>ne:</b> Chapters fr General Introdu		nilosophy of 19th	and 20th
Course type, scop Course type: Pra Recommended Per week: 2 Per Course method:	actice course-load (ho study period: 2	urs):			
Number of credit	ts: 2				
Recommended se	emester/trimest	er of the cours	e: 2.		
Course level: II.					
Prerequisities:					
Conditions for co	ourse completio	n:			
Learning outcom	les:				
Brief outline of t	he course:				
Recommended li	terature:				
Course language	•				
<b>Course assessme</b> Total number of a	-	s: 10			
A	В	С	D	Е	FX
50.0	20.0	10.0	0.0	10.0	10.0
Provides: doc. Ph	Dr. Pavol Tholt,	PhD., mim. pr	of.		1
Date of last modi	fication: 31.08.	2017			
Approved: Guara	nteeprof. RNDr.	Stanislav Voka	ál, DrSc.		

University: P. J.	Šafárik Univers	sity in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚFV KDO1/14	Course na	ame: Methods of	f Clinical Dosim	etry	
Course type, sco Course type: Le Recommended Per week: 2 Per Course method	ecture course-load (h r study period:	ours):			
Number of credi	its: 4				
Recommended s	emester/trimes	ster of the cours	se: 2.		
Course level: II.					
Prerequisities:					
Conditions for c	ourse completi	ion:			
Learning outcon Basic methods of		etry.			
radiation. The d	ots of clinical do lose measurem osimetry of bea on simulation	ent methods. Nums "in phantom	lew trends in c s" and "in vivo"	lications. The sou linical dosimetry dosimetry. 3D-fi herapy.	. PC supported
1. Podorsak E.B.	.et al. : Radiatio	0, ,		iams and Wilkins	
Course language	2:				
Course assessme Total number of		its: 3			
A	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: doc. R	NDr. Pavel Mat	tula, CSc.			
Date of last mod	ification · 26 00	9 2017			
Date of fast mou	<b>incation</b> , 20.02	.2017			

University: P. J. Šafá	rik Universi	ty in Košice	
Faculty: Faculty of S	cience		
<b>Course ID:</b> KPPaPZ/KK/07	Course na	me: Communication and Coop	peration
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	ce rse-load (ho dy period: 1	ours):	
Number of credits: 2	2		
Recommended seme	ster/trimest	ter of the course: 3.	
Course level: II.			
Prerequisities:			
Conditions for cours	e completio	on:	
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	iture:		
Course language:			
<b>Course assessment</b> Total number of asse	ssed student	s: 281	
abs		n	Z
98.22		1.78	0.0
Provides: Mgr. Ondro	ej Kalina, Pł	D., Mgr. Lucia Hricová, PhD.	
Date of last modifica	tion: 21.08.	2017	
Approved: Guarantee	eprof. RNDr	: Stanislav Vokál, DrSc.	

University: P. J. Safái	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚTVŠ/ KP/12	Course name: Survival Co	purse
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	ce r <b>se-load (hours):</b> y period: 36s	
Number of credits: 2	,	
Recommended seme	ster/trimester of the cours	e:
Course level: I., II.		
Prerequisities:		
<b>Conditions for cours</b> Conditions for course Attendance Final assessment: cor	1	ks within the course
conditions as they wi and demanding situat	Il obtain theoretical knowled ions connected with surviva work and students will lear	afe stay and movement in extreme natural dge and practical skills to solve the extraordinary and minimization of damage to health. The m how to manage and face the situations that
<b>Brief outline of the c</b> Brief outline of the co Lectures: 1. Principles of behav	ourse:	
<ol> <li>Preparation and lea</li> <li>Objective and subj</li> <li>Principles of hygie</li> <li>Exercises:</li> <li>Movement in terra</li> </ol>	ective danger in mountains ne and prevention of damag in, orientation and navigatic rovised overnight stay	ent and stay in unknown mountains ge to health in extreme conditions on in terrain (compasses, GPS)
<ol> <li>Preparation and lea</li> <li>Objective and subj</li> <li>Principles of hygie</li> <li>Exercises:         <ol> <li>Movement in terra</li> <li>Preparation of imp</li> </ol> </li> </ol>	ective danger in mountains ne and prevention of damag in, orientation and navigatio rovised overnight stay d food preparation.	e to health in extreme conditions
<ol> <li>Preparation and lea</li> <li>Objective and subj</li> <li>Principles of hygie</li> <li>Exercises:         <ol> <li>Movement in terra</li> <li>Preparation of imp</li> <li>Water treatment an</li> </ol> </li> </ol>	ective danger in mountains ne and prevention of damag in, orientation and navigatio rovised overnight stay d food preparation.	e to health in extreme conditions
<ol> <li>Preparation and lea</li> <li>Objective and subj</li> <li>Principles of hygie</li> <li>Exercises:         <ol> <li>Movement in terra</li> <li>Preparation of imp</li> <li>Water treatment an</li> </ol> </li> <li>Recommended litera</li> </ol>	ective danger in mountains ne and prevention of damag in, orientation and navigatio rovised overnight stay d food preparation. ture:	e to health in extreme conditions
<ol> <li>Preparation and lea</li> <li>Objective and subj</li> <li>Principles of hygie</li> <li>Exercises:         <ol> <li>Movement in terra</li> <li>Preparation of imp</li> <li>Water treatment an</li> </ol> </li> <li>Recommended litera</li> <li>Course language:</li> <li>Course assessment</li> </ol>	ective danger in mountains ne and prevention of damag in, orientation and navigatio rovised overnight stay d food preparation. ture:	e to health in extreme conditions

Provides: MUDr. Peter Dombrovský, Mgr. Marek Valanský

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

	of Science				
<b>Course ID:</b> ÚFV KTP1a/03	// Course n	a <b>me:</b> Quantum F	ield Theory I		
Course type, sco Course type: L Recommended Per week: 3 / 1 Course method	ecture / Practic course-load (l Per study per	e hours):			
Number of cred	i <b>ts:</b> 6				
Recommended :	semester/trime	ester of the cours	<b>e:</b> 1.		
Course level: II.					
Prerequisities:					
Conditions for c homeworks; the	-	t <b>ion:</b> and common anal	ysis of problem u	under consideration	on, exam
	nowledges abou	ut modern trends a physical systems v		-	tion of
formalism. Sym	metries and rela	tum field. Particle ted conservation l	aws for currents.	Euler-Lagrange	equations. Basic
Gordon and Dira Quantization of	ac equations, N	magnetic and vec faxwell equations asic commutating	. Lagrangeans a	nd Hamiltonians	for these fields
Gordon and Dira Quantization of fields. <b>Recommended</b> I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.:	ac equations, M free fileds. Ba literature: I., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror	faxwell equations asic commutating Vvedenie v teoriu	. Lagrangeans an and anticommu u kvantovannych elds (dva diely), J njamin,New Yorl	nd Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne	for these fields or free quantum 1957 (prvé ew York, 1966.
Gordon and Dira Quantization of fields. <b>Recommended</b> I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.:	ac equations, M free fileds. Ba literature: N., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e:	Axwell equations asic commutating Vvedenie v teorin (4. Vydanie). vistic quantum fie n Interactions, Ber	. Lagrangeans an and anticommu u kvantovannych elds (dva diely), J njamin,New Yorl	nd Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne	for these fields or free quantum 1957 (prvé ew York, 1966.
Gordon and Dira Quantization of fields. Recommended I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.: Vzaimodejstvije Course languag	ac equations, M free fileds. Ba literature: N., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e: sh ent	Axwell equations asic commutating Vvedenie v teoriu (4. Vydanie). vistic quantum fie n Interactions, Ber mami, Mir, Mosky	. Lagrangeans an and anticommu u kvantovannych elds (dva diely), J njamin,New Yorl	nd Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne	for these fields or free quantum 1957 (prvé ew York, 1966.
Gordon and Dira Quantization of fields. <b>Recommended</b> I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.: Vzaimodejstvije Course languag slovak and engli	ac equations, M free fileds. Ba literature: N., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e: sh ent	Axwell equations asic commutating Vvedenie v teoriu (4. Vydanie). vistic quantum fie n Interactions, Ber mami, Mir, Mosky	. Lagrangeans an and anticommu u kvantovannych elds (dva diely), J njamin,New Yorl	nd Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne	for these fields or free quantum 1957 (prvé ew York, 1966.
Gordon and Dira Quantization of fields. <b>Recommended</b> I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.: Vzaimodejstvije Course languag slovak and engli Course assessme Total number of	ac equations, M free fileds. Ba literature: I., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e: ish ent assessed stude	Axwell equations asic commutating Vvedenie v teoriu (4. Vydanie). vistic quantum fic n Interactions, Ber nami, Mir, Mosky	. Lagrangeans an and anticommu a kvantovannych elds (dva diely), 2 njamin,New Yorl 7a, 1975.	nd Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne c, 1972; ruský pre	for these fields r free quantun 1957 (prvé ew York, 1966. eklad:
Gordon and Dira Quantization of fields. Recommended I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.: Vzaimodejstvije Course languag slovak and engli Course assessme Total number of A 56.14	ac equations, M free fileds. Ba literature: N., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e: ish ent assessed stude B 22.81	Axwell equations asic commutating Vvedenie v teoriu (4. Vydanie). vistic quantum fic n Interactions, Ber nami, Mir, Mosky nts: 57	Lagrangeans and anticommu a kvantovannych elds (dva diely), 2 njamin,New Yorl 7a, 1975.	ed Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne c, 1972; ruský pre E 7.02	for these fields r free quantun 1957 (prvé ew York, 1966. eklad: FX
Gordon and Dira Quantization of fields. Recommended I Bogoljubov N.N vydanie); Mosky Bjorken J.D., Dr Feynmann R.P.: Vzaimodejstvije Course languag slovak and engli Course assessme Total number of A 56.14	ac equations, M free fileds. Ba literature: I., Širkov D.V.: va, Nauka 1984 rell S.D.: Relati Photon-Hadror fotonov s adro e: ish ent assessed stude B 22.81 RNDr. Michal H	Axwell equations asic commutating Vvedenie v teoriu (4. Vydanie). vistic quantum fie n Interactions, Ber mami, Mir, Mosky nts: 57 C 7.02 Hnatič, DrSc., RN	Lagrangeans and anticommu a kvantovannych elds (dva diely), 2 njamin,New Yorl 7a, 1975.	ed Hamiltonians tating relatios fo polej, Moskva, 1 McGraw-Hill, Ne c, 1972; ruský pre E 7.02	for these fields r free quantun 1957 (prvé ew York, 1966. eklad: FX

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚFV/ KTP1b/03	Course na	me: Quantum F	ield Theory II		
Course type, sco Course type: Le Recommended Per week: 3 / 1 Course method	cture / Practice course-load (h Per study perio	ours):			
Number of credi	<b>ts:</b> 6				
Recommended se	emester/trimes	ter of the cours	e: 2.		
Course level: II.					
<b>Prerequisities:</b> Ú	FV/KTP1a/03				
Conditions for co homeworks, their	-		ysis of the probl	em under conside	eration; exam
<b>Learning outcon</b> To offer basic kn microword and p	owledges about			-	otion of
Interacting fields Lagrange operate calculation of S the proton on el- divergences of the	or in QED. S - matrix. S - m ectron cross se	<ul> <li>matrix. Wick matrix and cross ction calculation</li> </ul>	theorems and I section of the p n in QCD frame	Feynman diagran processes. Compto	ns. Perturbative on scattering of
Recommended li Bogoljubov N.N. vydanie); Moskv Itzykon C., Zuber Icikon K., Zjuber Mir, Moskva, 198 Ryder L.H.: Quar preklad: Rajder L	, Širkov D.V.: V a, Nauka 1984 ( r J.B.: Quantum r Z.B.: Kvantov 34. ntum field theor	(4. Vydanie) 1 field theory,Mc aja teoria polja, ry, Cambridge U	Graw-Hill, New	York, 1986; rusk	
Course language slovak and englis					
<b>Course assessme</b> Total number of a		ts: 53			
Α	В	С	D	Е	FX
52.83	30.19	7.55	3.77	5.66	0.0
Provides: prof. R	NDr. Michal H	natič, DrSc., RN	Dr. Tomáš Lučiv	vjanský, PhD.	
Date of last mod	fication: 26.09	.2017			
Approved: Guara	inteeprof. RND	r. Stanislav Voka	ál, DrSc.		

University: P. J. Ša	fárik Universi	ty in Košice			
Faculty: Faculty of	Science				
<b>Course ID:</b> ÚFV/ KZI1/03	Course na	me: Cosmic Ray	/S		
Course type, scope Course type: Lec Recommended co Per week: 2 Per s Course method: 1	ture ourse-load (ho tudy period:	ours):			
Number of credits	: 4				
Recommended ser	nester/trimes	ter of the cours	e: 3.		
Course level: II.					
Prerequisities:					
<b>Conditions for cou</b> Recherche work. Final examination.	rse completio	on:			
Learning outcome To acquaint with th		cteristics of cosm	nic rays.		
material. Detectors of cosmi atmosphere. Solar cosmic rays. Modulation and pro Influence of geoma Acceleration mech	oduction of co	osmic rays in the n cosmic ray par	heliosphere.	n the upper layers	s of the
Recommended lite 1. M.S. Longair: H Cambridge University 2. M. S. Longair. H the interstellar med 3. T. K. Gaisser. Co 4. L. Miroshnichen 5. L.I. Dorman: Co 6. K. Kudela: On e 2009.	rature: igh Energy As sity Press, Feb ligh Energy A lium. Cambrid osmic Rays an ko, Solar Cos smic Rays in	strophysics: Volu 27, 1992 - Sciel strophysics, Volu lge, second edition d Particle Physic mic Rays, Spring the Earth's Atmo	nce - 440 pages ume 2: Stars, the on, 1994. cs. Cambridge, ger, 2015 osphere and Unc	e galaxy, and 1990. derground, Spring	ger, 2004.
Course language:					
	t				
		a. 31			
Course assessment Total number of as A		c C	D	E	FX

Provides: prof. Ing. Karel Kudela, DrSc.

Date of last modification: 26.09.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

University: P. J. Šafá	rik University in Košice	
Faculty: Faculty of S	cience	
<b>Course ID:</b> ÚTVŠ/ LKSp/13	Course name: Summer Co	ourse-Rafting of TISA River
Course type, scope a Course type: Practic Recommended cour Per week: Per stud Course method: pre	ce <b>rse-load (hours):</b> l <b>y period:</b> 36s	
Number of credits: 2		
Recommended seme	ster/trimester of the cours	e:
Course level: I., II.		
Prerequisities:		
<b>Conditions for course</b> Conditions for course Attendance Final assessment: Ra	-	attended/not attended)
Learning outcomes: Learning outcomes: Students have knowle	edge of rafts (canoe) and the	eir control on waterway.
5. Canoe lifting and c	ourse: iculty of waterways iting ning using an empty canoe carrying n the water without a shore be out of the water	contact
Recommended litera	iture:	
Course language:		
<b>Course assessment</b> Total number of asses	ssed students: 142	
	abs	n
	41.55	58.45

Provides: Mgr. Peter Bakalár, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

		JURSE INFORM		I L.N	
University: P. J.	Šafárik Univer	sity in Košice			
Faculty: Faculty	of Science				
Course ID: ÚFV PFC1/03	// Course n	ame: Selected To	pics from Elem	entary Particle Ph	ysics
Course type, sc Course type: L Recommended Per week: 2 Pe Course method	Lecture l course-load (l er study period	hours):			
Number of cred	lits: 4				
Recommended	semester/trime	ester of the course	e: 3.		
Course level: II					
Prerequisities:	ÚFV/FEC1/04				
<b>Conditions for</b> 2 x test Examination	course complet	ion:			
	tion of processe	s in nuclear and pa structures - to the		and selected exper	iments that
formfactor. Elas scattering and t	n interactions a stic scattering of he structure of ons and strong	of electrons on nu particles. Scaling interaction. Partic	cleons, formfa	eometric shape of actor of nucleons. n model. Quark n in electron - posi	Deep inelastic nodel, coloured
Martin B., Shaw Martin B.R.: Nu Povh, Rith, Sch Berlin, 1993.	troduction to h G.: Particle Ph Iclear and Partic olz, Zetsche: Pa	igh energy physics hysics, Wiley, 2008 cle Physics, Wiley rticles and Nuclei es and symmetries	3. , 2006. , An Introductio	on to the Physical	Concepts,
Course languag slovak and engl					
Course assessm Total number of		nts: 16			
А	В	С	D	Е	FX
50.0	25.0	12.5	6.25	6.25	0.0
Provides: doc. F	RNDr. Adela Kr	avčáková, PhD.			
Date of last mo	dification: 26.0	9.2017		-	
Approved: Gua	ranteeprof. RNI	Dr. Stanislav Voká	l, DrSc.		
	1				

		sity in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚFV PFJ1/13	V Course n	ame: Programmir	ng and Data Pro	cessing in Nuclea	ar Physics I
Recommended	Lecture / Practico l course-load (h 2 Per study peri	e iours):			
Number of cred	lits: 5				
Recommended	semester/trime	ster of the course	e: 1.		
Course level: II					
Prerequisities:					
Conditions for of semestral project	1	ion:			
Learning outco To provide prac		of the object orien	ted programmir	ng in C++	
<b>Brief outline of</b> A practical intro program develo	oduction to the	world of the object	et oriented prog	ramming, subset	of the C++ and
Recommended	.R. Nackman: S	cientific and engin	neering C++, A	ddison Wesley, 19	994
<ol> <li>J.J. Barton, L</li> <li>B. Kernighan</li> <li>B. Eckel, Thi</li> <li>http://www.cp</li> </ol>	nking in C++, 2	nd ed., 2000			
<ol> <li>B. Kernighan</li> <li>B. Eckel, Thi</li> </ol>	nking in C++, 2 olusplus.com/do	nd ed., 2000			
<ol> <li>B. Kernighan</li> <li>B. Eckel, Thi</li> <li>http://www.cp</li> </ol>	nking in C++, 2 olusplus.com/do ee: ent	nd ed., 2000 c/tutorial			
2. B. Kernighan 3. B. Eckel, Thi 4. http://www.cp Course languag Course assessm	nking in C++, 2 olusplus.com/do ee: ent	nd ed., 2000 c/tutorial	D	E	FX
<ol> <li>B. Kernighan</li> <li>B. Eckel, Thi</li> <li>http://www.cp</li> <li>Course languag</li> <li>Course assessm</li> <li>Total number of</li> </ol>	nking in C++, 2 olusplus.com/do e: ent `assessed studer	nd ed., 2000 c/tutorial nts: 9	D 0.0	E 0.0	FX 0.0
<ul> <li>2. B. Kernighan</li> <li>3. B. Eckel, Thi</li> <li>4. http://www.cp</li> <li>Course languag</li> <li>Course assessm</li> <li>Total number of</li> <li>A</li> <li>77.78</li> </ul>	nking in C++, 2 olusplus.com/do ee: ent `assessed studer B 0.0	nd ed., 2000 c/tutorial nts: 9 C 22.22			
2. B. Kernighan 3. B. Eckel, Thi 4. http://www.cp Course languag Course assessm Total number of A	nking in C++, 2 olusplus.com/do ee: ent `assessed studer B 0.0 : Martin Val'a, P	nd ed., 2000 c/tutorial nts: 9 C 22.22 PhD.			

		ty in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚFV PJF2/13	/ Course nar	ne: Programmi	ng and Data Pro	cessing in Nuclea	r Physics II
Course type, sco Course type: Le Recommended Per week: 2 / 2 Course method	ecture / Practice course-load (ho Per study perio	urs):			
Number of credi	<b>ts:</b> 5				
Recommended s	emester/trimest	er of the cours	e: 2.		
Course level: II.					
Prerequisities:					
Conditions for co	ourse completio	n:			
practical skills w Brief outline of t Basic description	ith object-oriente he course: of ROOT enviro creation and fitt	ed programming	g language C++.	work and help the s for data process re suitable for and	ing: histogram
acco, working v	with trees.				alysis in ROO
Recommended li 1. http://www.cpi 2. http://www-ro 3. http://root.cerr	i <b>terature:</b> lusplus.com/doc/ ot.fnal.gov/root/0	CPlusPlus/index	x.html		
Recommended li 1. http://www.cpi 2. http://www-ro 3. http://root.cerr	i <b>terature:</b> lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte	CPlusPlus/index	x.html		
Recommended li 1. http://www.cpl 2. http://www-ro	iterature: lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte e: ent	CPlusPlus/inde: nt/users-guide	x.html		
Recommended li 1. http://www.cpi 2. http://www-ro 3. http://root.cerr Course language Course assessme	iterature: lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte e: ent	CPlusPlus/inde: nt/users-guide	x.html	E	FX
Recommended li 1. http://www.cpl 2. http://www-ro 3. http://root.cerr Course language Course assessme Total number of a	iterature: lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte e: ent assessed students	CPlusPlus/inde: nt/users-guide s: 9		E 11.11	
Recommended li 1. http://www.cpl 2. http://www-ro- 3. http://root.cerr Course language Course assessme Total number of a 88.89	iterature: lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte e: ent assessed students B 0.0	CPlusPlus/inde: nt/users-guide s: 9 C 0.0	D 0.0	11.11	FX
Recommended li 1. http://www.cpl 2. http://www-ro- 3. http://root.cerr Course language Course assessme Total number of a A	iterature: lusplus.com/doc/ ot.fnal.gov/root/ n.ch/drupal/conte e: ent assessed students B 0.0 NDr. Marek Bon	CPlusPlus/inde: nt/users-guide s: 9 C 0.0 nbara, PhD., RN	D 0.0	11.11	FX

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science				
<b>Course ID:</b> Dek. UPJŠ/PPZ/13	PF Course na on a Labor	-	Development a	nd Key Competer	nces for Success
Course type, sco Course type: P Recommended Per week: Per Course method	ractice course-load (h study period: 1	ours):			
Number of cred	its: 2				
Recommended s	semester/trimes	ster of the cours	<b>e:</b> 1., 3.		
Course level: II.					
Prerequisities:					
Conditions for c	ourse completi	on:			
Learning outcor	nes:				
Brief outline of t	the course:				
Recommended l	iterature:				
Course language	e:				
<b>Course assessme</b> Total number of		ts: 39			
A	В	С	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides: RNDr.	Peter Stefányi,	PhD.		·	
Date of last mod	lification: 19.02	2.2018			
Approved: Guar	anteeprof. RND	r. Stanislav Voká	l, DrSc.		

University: P. J. Ša	fárik Univers	ity in Košice				
Faculty: Faculty of	Science					
<b>Course ID:</b> KPPaPZ/PPZMg/12	/12 Course name: Psychology and Health Psychology (Master's Study)					
Course type, scope Course type: Lect Recommended co Per week: 1 / 2 Pe Course method: p	ture / Practice ourse-load (he er study perio	ours):				
Number of credits	: 4					
Recommended sen	nester/trimes	ter of the cours	e:			
Course level: II.						
Prerequisities:						
Conditions for cou	rse completi	on:				
Learning outcome	s:					
Brief outline of the	e course:					
<b>Recommended</b> lite	rature:					
Course language:						
<b>Course assessment</b> Total number of ass		ts: 226				
A	В	С	D	Е	FX	
19.47	25.22	25.66	13.27	15.93	0.44	
Provides: PhDr. Ar	nna Janovská,	PhD., Mgr. Luc	ia Hricová, PhD.			
Date of last modifi	cation: 21.08	.2017				
Approved: Guaran	teeprof. RND	r. Stanislav Voka	ál, DrSc.			

University: P. J.	Šafárik Univers	ity in Košice				
Faculty: Faculty						
<b>Course ID:</b> ÚFV PSD/14	<b>(D:</b> ÚFV/ <b>Course name:</b> Introduction to distributed data processing					
Course type, sco Course type: L Recommended Per week: 2 Pe Course method	ecture course-load (h r study period:	ours):				
Number of cred	its: 4					
Recommended s	semester/trimes	ter of the cour	-se: 2.			
<b>Course level:</b> II.						
Prerequisities:						
Conditions for <b>c</b>	ourse completi	on:				
Learning outcom Introductory lect		f parallel data p	rocessing on anal	ysis farms.		
Scripting in Unit Simple parameter Basic principles Basic principles Implementation	ization of jobs of batch farm of of interactive fa	ganizations rm organization	15			
Recommended https://www.gnu	iterature: .org/software/ba tivecomputing.c h/drupal/	ish/ com/products/oj	pen-source/torque	/		
<b>Course languag</b> English	e:					
Course assessme Total number of		ts: 2				
А	В	С	D	E	FX	
100.0	0.0	0.0	0.0	0.0	0.0	
Provides: doc. R	NDr. Jozef Urba	án, CSc., RNDr	. Martin Val'a, Ph	D.		
Date of last mod	lification: 22.02	.2018				
Ammunada Cura	antoonrof DND	r. Stanislav Vol	vál DrSc			

<b>P I F I</b>		-					
Faculty: Facult	y of Science						
Course ID: ÚF RJF1/14	V/ Course n	Course name: Relativistic Nuclear Physics					
	Lecture d course-load (l er study period	hours):					
Number of crea	dits: 4						
Recommended	semester/trime	ester of the cour	se: 2.				
Course level: II	•						
Prerequisities:							
Conditions for	course complet	tion:					
Learning outco Introduction to		ions at relativisti	onorgios				
Brief outline of	the course:						
Brief outline of Basic parametr invariants, rapic energy threshol thermal and tra	<b>the course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra,	es of particle colore variables. Ba or sound, cross collision volum	llisions at high e sic parametres o sections, spectate	nergies. Relativis f high energy nuc ors and participant l for hadron-nucle ion plasma.	clear collisions ts, temperature		
Brief outline of Basic parametr invariants, rapid energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colling: Introduction	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-gh ergies, Skriptá, O Heavy Ion Collis	f high energy nuc ors and participant for hadron-nucle	clear collisions ts, temperature eus and nuclea		
Brief outline of Basic parametr invariants, rapid energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor	<b>the course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colling: Introduction ozental' I.L.: Jad	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-gh ergies, Skriptá, O Heavy Ion Collis	f high energy nuc ors and participant l for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien	clear collisions ts, temperature eus and nuclea		
Brief outline of Basic parametr invariants, rapid energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Won Nikitin Ju.P., Re Course languag Course assessm	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colling: Introduction ozental' I.L.: Jad ge:	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy lernaja fizika vys	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-gh ergies, Skriptá, O Heavy Ion Collis	f high energy nuc ors and participant l for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien	clear collisions ts, temperature eus and nuclea		
Brief outline of Basic parametr invariants, rapid energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor Nikitin Ju.P., Re Course languag Course assessm	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colling: Introduction ozental' I.L.: Jad ge:	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy lernaja fizika vys	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-gh ergies, Skriptá, O Heavy Ion Collis	f high energy nuc ors and participant l for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien	clear collisions ts, temperature eus and nuclea		
Brief outline of Basic parametr invariants, rapic energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor Nikitin Ju.P., Re Course languag Course assessm Total number of	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colling: Introduction ozental' I.L.: Jad ge: nent f assessed studer	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy lernaja fizika vys	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-glu ergies, Skriptá, O Heavy Ion Collis okych energij Mo	f high energy nuc ors and participant for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien oskva, Atomizdat,	clear collisions ts, temperature eus and nuclea ttific, 1994. , 1980.		
Brief outline of Basic parametr invariants, rapic energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor Nikitin Ju.P., Re Course languag Course assessm Total number of A 52.17	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colli ng: Introduction ozental' I.L.: Jad ge: B f assessed studen B 17.39	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy lernaja fizika vys nts: 23 C 17.39	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-glu ergies, Skriptá, O Heavy Ion Collis okych energij Mo	f high energy nuc ors and participant for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien oskva, Atomizdat,	clear collisions ts, temperature eus and nuclea tific, 1994. , 1980. FX		
Brief outline of Basic parametr invariants, rapic energy threshol thermal and tra collisions. The Recommended Lovhoiden G.: 1 Chenk-Yin Wor Nikitin Ju.P., Re Course languag Course assessm Total number of A	<b>The course:</b> es and quantitie dity and light co ds, the velocity nsverse spectra, equation of state <b>literature:</b> Heavy Ion Colli ng: Introduction ozental' I.L.: Jad ge: nent f assessed studen B 17.39 RNDr. Jozef Urb	es of particle colone variables. Ba or sound, cross a collision volum e for nuclear matt sions at High En- to High-Energy lernaja fizika vys nts: 23 C 17.39 pán, CSc.	llisions at high e sic parametres o sections, spectato e. Glauber mode ter. The quark-glu ergies, Skriptá, O Heavy Ion Collis okych energij Mo	f high energy nuc ors and participant for hadron-nucle ion plasma. slo-Bergen, 1996 ions, World Scien oskva, Atomizdat,	clear collisions ts, temperature eus and nuclea tific, 1994. , 1980. FX		

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
Course ID: ÚFV SEB1/04	ÚFV/ Course name: Seminar from Nuclear Physics						
Course type, sco Course type: P Recommended Per week: 1 Pe Course method	ractice course-load (h r study period: l: present	ours):					
Number of cred							
Recommended s	semester/trimes	ster of the cours	e: 1.				
Course level: II.							
Prerequisities:							
Conditions for <b>c</b>	ourse completi	on:					
<b>Learning outcor</b> To bring the topi		nethodics and too	ls of high energ	y physics to the s	tudents.		
Brief outline of a Department sem		opical problems	of the nuclear a	nd subnuclear phy	vsics.		
Recommended I	iterature:						
Course language	e:						
Course assessme Total number of		ts: 13					
A	В	С	D	E	FX		
100.0	0.0	0.0	0.0	0.0	0.0		
Provides: doc. R	NDr. Jozef Urb	án, CSc.					
Date of last mod	lification: 26.09	0.2017					
	anto annof DND	r. Stanislav Voká	al DrSc				

University: P. J. Š	afárik Universit	y in Košice						
Faculty: Faculty o	f Science							
<b>Course ID:</b> ÚFV/ SEC1/04	Course nai	Course name: Seminar from Nuclear Physics						
Course type, scop Course type: Pra Recommended c Per week: 1 Per Course method:	ctice ourse-load (ho study period:	urs):						
Number of credits	s: 1							
Recommended se	mester/trimest	er of the cours	se: 2.					
Course level: II.								
Prerequisities:								
Conditions for co	urse completio	n:						
<b>Learning outcom</b> To bring the topica		thodics and too	ols of high energy	y physics to the s	tudents.			
Brief outline of th Department semin		pical problems	of the nuclear an	d subnuclear phy	sics.			
Recommended lit	erature:							
Course language:								
<b>Course assessmen</b> Total number of as		s: 12						
A	В	С	D	Е	FX			
100.0	0.0	0.0	0.0	0.0	0.0			
Provides: doc. RN	Dr. Jozef Urbá	n, CSc.	<u>.</u>					
Date of last modif	ication: 26.09.	2017						
Approved: Guara	teeprof RNDr	Stanislay Vok	ál DrSc					

University: P. J.	Šafárik Univers	ity in Košice					
Faculty: Faculty	of Science						
Course ID: ÚFV SED1/04							
Course method	ractice course-load (h r study period: l: present	ours):					
Number of cred							
Recommended	semester/trimes	ster of the cours	e: 3.				
Course level: II.							
Prerequisities:							
Conditions for <b>c</b>	ourse completi	on:					
<b>Learning outco</b> To bring the top		ethodics and too	ls of high energ	y physics to the s	tudents.		
Brief outline of Department sem		opical problems	of the nuclear ar	nd subnuclear phy	vsics.		
Recommended	literature:						
Course languag	e:						
Course assessme Total number of		ts: 12					
A	В	С	D	E	FX		
83.33	8.33	8.33	0.0	0.0	0.0		
Provides: doc. R	NDr. Jozef Urb	án, CSc.			•		
Date of last mod	lification: 26.09	0.2017					
	antaanraf DND	r. Stanislav Voká	il DrSc				

University: P. J.	Šafárik Universi	ty in Košice				
Faculty: Faculty	of Science					
Course ID: ÚFV SPJ1/99	Course name: Special Practice from Nuclear Physics					
	ractice course-load (ho r study period:	ours):				
Number of cred	its: 3					
Recommended	semester/trimes	ter of the cour	se: 2.			
Course level: II.						
Prerequisities:						
Conditions for of written tests, me	-		s, written reports	s of tasks		
Learning outco Practice in nucle tasks.		ntitative and qu	alitative analysis	, selected detecto	r methods and	
using ethalon. A from their may halftimes.Semic	practice. Quant Activity determin kimal energy. B	nation of gamm eta - spectroso rs. Fine structu	na source.Identif cope. Determina re of the alpha sp	s. Gamma sourc ication of unkno tion of short liv pectrum of Am-24	wn beta source ved radioisotop	
na : http://www.	.Vokál: Základné upjs.sk/public/m	edia/5596/Zakla	adne-fyzikalne-p	UPJŠ, Košice, 2 raktikum-III.pdf iments, Springer-		
<b>Course languag</b> slovak	e:					
Course assessm Total number of	ent assessed student	s: 11				
А	В	С	D	Е	FX	
81.82	18.18	0.0	0.0	0.0	0.0	
Provides: doc. F	NDr. Janka Vrlá	ková, PhD.		•		
Date of last mo	lification: 26.09	.2017				
Approved: Gua						

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science				
Course ID: ÚF SPJFa/14	V/ Course na	me: Semestral p	roject I		
<b>Course type:</b>	• •				
Number of cred	lits: 2				
Recommended	semester/trimes	ter of the cours	<b>e:</b> 1.		
Course level: II	•				
Prerequisities:					
Successful solut orally or in writ Learning outco	ten form. mes: ic problems and	n by the supervi		tion of the achieve	
Brief outline of		nuclear and sub	nuclear physics.		
Recommended As recommended	literature: ed by the supervis	sor			
Course languag slovak and engl	•				
Course assessm Total number of	ent assessed studen	ts: 7			
А	В	С	D	E	FX
85.71	0.0	0.0	0.0	14.29	0.0
Provides:				·	
Date of last mo	dification: 26.09	.2017			
Annroved: Gua	ranteeprof RND	r. Stanislav Voka	il. DrSc.		

University: P. J.	Šafárik Univers	ity in Košice			
Faculty: Faculty	of Science				
Course ID: ÚFV SPJFb/14	// Course na	me: Semestral p	roject II		
Course type, sco Course type: Recommended Per week: Per Course methoo	course-load (h study period:				
Number of cred	-				
Recommended	semester/trimes	ter of the cours	<b>e:</b> 2.		
Course level: II.					
Prerequisities:					
orally or in writh Learning outcor To learn the basi	ion of tasks give en form. mes: ic problems and	n by the supervi		tion of the achieve	
subnuclear phys Brief outline of To solve selected Recommended	<b>the course:</b> d problems from	nuclear and sub	nuclear physics.		
As recommende		sor.			
Course languag slovak and engli					
Course assessm Total number of		ts: 7			
А	В	С	D	E	FX
85.71	0.0	0.0	0.0	14.29	0.0
Provides:				· /	
Date of last mod	lification: 26.09	.2017			
		r. Stanislav Voká			

University: P. J	. Šafárik Univers	ity in Košice			
Faculty: Facult	y of Science				
<b>Course ID:</b> ÚF SPJFc/14	V/ Course na	me: Semestral	project III		
Course type: Recommende	ope and the met d course-load (h r study period: d: present				
Number of cree	lits: 6				
Recommended	semester/trimes	ster of the cours	se: 3.		
Course level: II	•				
Prerequisities:					
Successful solu orally or in writ	ten form. mes: sic problems and	en by the superv	-	tion of the achiev	
Brief outline of	the course:	nuclear and sul	onuclear physics.		
Recommended As recommended	<b>literature:</b> ed by the supervi	sor.			
Course languages slovak and engl					
Course assessm Total number o	ent f assessed studen	ts: 8			
А	В	С	D	Е	FX
62.5	25.0	0.0	0.0	12.5	0.0
Provides:			•	•	-
Date of last mo	dification: 26.09	0.2017			
Annroved Gua	ranteeprof RND	r. Stanislav Vok	ál DrSc		

University: P. J. Šafá	rik University in	Košice	
Faculty: Faculty of S	cience		
<b>Course ID:</b> KPPaPZ/SPVKE/07	<b>Course name:</b> Situations	Social-Psychological Tr	raining of Coping with Critical Life
Course type, scope a Course type: Practic Recommended cour Per week: 2 Per stu Course method: pre	ce rse-load (hours) dy period: 28	:	
Number of credits: 2			
Recommended seme	ster/trimester o	f the course: 2.	
Course level: II.			
Prerequisities:			
Conditions for cours	e completion:		
Learning outcomes:			
Brief outline of the c	ourse:		
Recommended litera	ture:		
Course language:			
<b>Course assessment</b> Total number of asses	ssed students: 12	6	
abs		n	Z
97.62		2.38	0.0
Provides: Mgr. Ondre	ej Kalina, PhD.		· · · · · · · · · · · · · · · · · · ·
Date of last modifica	tion: 21.08.2017	7	
Approved: Guarantee	prof. RNDr. Sta	nislav Vokál, DrSc.	

University: P. J. Š	afárik Univers	ity in Košice			
Faculty: Faculty of	of Science				
Course ID: ÚFV/ SVKJ/99	Course na	me: Student Scie	entific Conferen	ce	
Course type, scop Course type: Recommended o Per week: Per s Course method:	course-load (h tudy period:				
Number of credit	s: 4				
Recommended se	mester/trimes	ter of the course	e: 2.		
Course level: II.					
Prerequisities:					
<b>Conditions for co</b> Contribution to St					
Learning outcom	es:				
Brief outline of th	e course:				
Recommended lit	erature:				
Course language:					
<b>Course assessmen</b> Total number of a	-	ts: 22			
A	В	С	D	Е	FX
100.0	0.0	0.0	0.0	0.0	0.0
Provides:				1	1
Date of last modi	fication: 26.09	.2017			
Approved: Guara	nteeprof. RND	r. Stanislav Voká	l, DrSc.		

-	Šafárik Univers	•			
Faculty: Faculty	of Science				
<b>Course ID:</b> ÚF TRS/03	// Course n	ame: Special Th	eory of Relativit	Į	
	lecture course-load (h er study period	nours):			
Number of cred	lits: 3				
Recommended	semester/trime	ster of the cours	se: 1.		
Course level: I.,	II.				
Prerequisities:	ÚFV/TEP1/03				
<b>Conditions for</b> Final examination	1	ion:			
Learning outco	mes:				
To acquaint stud	lents with princi	iples of a special	theory of relativ	ity.	
To acquaint stuce Brief outline of Galilean transf experiment. Ein physical conseq	the course: ormation and of stein's principle uences. Interval	Galilean princip s of the special t and light cone. Pr	le of relativity. heory of relativit	ity. Ether's hypothe y. Lorentz transfo owski's space-time tivistic mechanics	ormation and its e. Mathematica
To acquaint stud Brief outline of Galilean transfer experiment. Ein physical conseq apparatus of spece Recommended 1. Greiner W.: C 2004. 2. Goldstein H.,	lents with princi the course: ormation and o stein's principle uences. Interval scial relativity. R literature: Classical Mechan Poole Ch., Safk	Galilean princip s of the special ti and light cone. Pr Relativistic electro nics-Point Particl	le of relativity. heory of relativity oper time. Minko odynamics. Rela es and Relativity lechanics, Addis	Ether's hypothe y. Lorentz transfo owski's space-time	ormation and its e. Mathematica s. g, New York, rancisco, 2002.
To acquaint stud Brief outline of Galilean transfer experiment. Ein physical conseq apparatus of spece Recommended 1. Greiner W.: C 2004. 2. Goldstein H.,	lents with princi the course: ormation and o stein's principle uences. Interval ccial relativity. R literature: Classical Mechan Poole Ch., Safk Lifšic E.M.: Th	Galilean princip s of the special ti and light cone. Pr Relativistic electro nics-Point Particl	le of relativity. heory of relativity oper time. Minko odynamics. Rela es and Relativity lechanics, Addis	Ether's hypothe y. Lorentz transfo owski's space-time tivistic mechanics y, Springer-Verlag	ormation and its e. Mathematica s. g, New York, rancisco, 2002.
To acquaint stud Brief outline of Galilean transfe experiment. Ein physical conseq apparatus of spe Recommended 1. Greiner W.: C 2004. 2. Goldstein H., 3. Landau L.D., Course languag 1. Slovak,	lents with princi the course: ormation and o stein's principle uences. Interval ecial relativity. R literature: Classical Mechan Poole Ch., Safk Lifšic E.M.: Th e: ent	Galilean princip s of the special ti and light cone. Pr Relativistic electro nics-Point Particl to J.: Classical Ma ne Classical Theo	le of relativity. heory of relativity oper time. Minko odynamics. Rela es and Relativity lechanics, Addis	Ether's hypothe y. Lorentz transfo owski's space-time tivistic mechanics y, Springer-Verlag	ormation and its e. Mathematica s. g, New York, rancisco, 2002.
To acquaint stud Brief outline of Galilean transfi experiment. Ein physical conseq apparatus of spe Recommended 1. Greiner W.: C 2004. 2. Goldstein H., 3. Landau L.D., Course languag 1. Slovak, 2. English Course assessm	lents with princi the course: ormation and o stein's principle uences. Interval ecial relativity. R literature: Classical Mechan Poole Ch., Safk Lifšic E.M.: Th e: ent	Galilean princip s of the special ti and light cone. Pr Relativistic electro nics-Point Particl to J.: Classical Ma ne Classical Theo	le of relativity. heory of relativity oper time. Minko odynamics. Rela es and Relativity lechanics, Addis	Ether's hypothe y. Lorentz transfo owski's space-time tivistic mechanics y, Springer-Verlag	ormation and its e. Mathematica s. g, New York, rancisco, 2002.
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To acquaint stud Brief outline of Galilean transfi experiment. Ein physical conseq apparatus of spe Recommended 1. Greiner W.: C 2004. 2. Goldstein H., 3. Landau L.D., Course languag 1. Slovak, 2. English Course assessm Total number of A 52.07	lents with princi the course: ormation and of stein's principle uences. Interval scial relativity. R literature: Classical Mechan Poole Ch., Safk Lifšic E.M.: Th se: ent Sassessed studer B 22.49	Galilean princip s of the special ti and light cone. Pr Relativistic electro nics-Point Particl co J.: Classical Ma e Classical Theo nts: 169 C 13.61	le of relativity. heory of relativity oper time. Minko odynamics. Rela es and Relativity fechanics, Addiso ry of Fields, Pers	Ether's hypothe y. Lorentz transfo owski's space-time tivistic mechanics y, Springer-Verlag on Wesley, San Fr gamon Press, Oxf	FX
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University	P. J. Šafái	rik University i	n Košice				
Faculty: Fa	aculty of So	cience					
<b>Course ID</b> TVa/11	: ÚTVŠ/	Course name	: Sports Acti	vities I.			
Course ty Recomme Per week	pe: Practic nded cour	rse-load (hours dy period: 28					
Number of	credits: 2						
Recommer	ided seme	ster/trimester	of the cours	<b>e:</b> 1.			
Course lev	el: I., I.II.,	II.					
Prerequisi	ties:						
Conditions	for course	e completion: completion: articipation in c	classes.				
relationshi	physical co p of studen	ondition and pe ts to the selecto			1		g the
University floorball, y tennis, spo In the first and particu physical co Last but no means of a In addition physical co the premise	ne of the co optional su provides f yoga, pilate rts for unfi two semes larities of i ondition, co ot least, the special pro- to these se lucation tra- es of the fac	burse: ubject, the Inst for students the es, swimming, t persons, stree sters of the firs ndividual sport oordination abi important role ogram of medic sports, the Inst inings with an a culty or Univers	e following s body-buildin tball, tennis, it level of ed ts, motor skil ilities, physic of sports act cal physical o itute offers to attractive pro	ports activiti ag, indoor for and volleyba ucation stude ls, game activities cal performativities is to e education to for those wh gram and org	ies: aerobics, otball, self-de all. ents will mas vities, they wince, and mot eliminate swin influence and o are interest ganises variou	basketball, efence and l ster basic ch ill improve l tor performa mming illite mitigate ur ted winter a us competitio	badminton karate, table aracteristics evel of their ince fitness gracy and by fitness. and summer ons, either a
Recommer	nded litera	ture:					
Course lan	guage:						
	essment						
Course ass		sed studente <sup>,</sup> 1	1672				
Course ass		abs-B	1672 abs-C	abs-D	abs-E	n	neabs

**Provides:** Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Ing. Iveta Cimboláková, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

	COUR	RSE INFORM	MATION LI	ETTER		
University: P. J. Šaf	árik University	in Košice				
Faculty: Faculty of	Science					
Course ID: ÚTVŠ/ TVb/11	Course name	: Sports Acti	vities II.			
Course type, scope Course type: Pract Recommended cou Per week: 2 Per st Course method: pu	ice 1 <b>rse-load (hour</b> 1dy period: 28					
Number of credits:	2					
Recommended sem	ester/trimester	of the cours	e: 2.			
Course level: I., I.II	, II.					
Prerequisities:						
<b>Conditions for cour</b> Conditions for cours Final assessment an	se completion:		ses - min. 759	<i>%</i> .		
Learning outcomes: Learning outcomes: Increasing physical relationship of stude	condition and p			-		g the
Brief outline of the Brief outline of the Within the optional University provides floorball, yoga, pila tennis, sports for un In the first two sem and particularities of physical condition, Last but not least, th means of a special p In addition to these physical education to the premises of the fa	course: subject, the Inst for students the tes, swimming, fit persons, streed esters of the first individual sport coordination ab e important role rogram of medit sports, the Inst rainings with an aculty or Univer	e following s body-buildir etball, tennis, st level of ed ts, motor skil ilities, physic e of sports ac cal physical titute offers attractive pro	sports activiting, indoor for and volleyba ucation study ls, game activities is to ever tivities is to ever education to for those who gram and org	ies: aerobics otball, self-d all. ents will ma- vities, they w nce, and mo eliminate swi influence an o are interes ganises vario	, basketball, lefence and l ster basic ch vill improve l tor performa imming illite d mitigate un sted winter a us competitio	badminton, karate, table aracteristics evel of their ance fitness. eracy and by hfitness. and summer ons, either at
<b>Recommended</b> liter	ature:					
Course language:						
Course assessment						
Total number of ass abs abs-A		10971 abs-C	abs-D	abs-E	n	neabs
			1		n 10.12	
85.37 0.57	0.02	0.0	0.0	0.05	10.13	3.86

**Provides:** Mgr. Peter Bakalár, PhD., Mgr. Dana Dračková, PhD., Mgr. Agata Horbacz, PhD., Mgr. Dávid Kaško, Mgr. Zuzana Küchelová, PhD., doc. PaedDr. Ivan Uher, PhD., Mgr. Marek Valanský, prof. RNDr. Stanislav Vokál, DrSc., Mgr. Marcel Čurgali, Ing. Iveta Cimboláková, PhD.

Date of last modification: 18.08.2017

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

University:	P. J. Šafárik	c University i	n Košice				
Faculty: Fa	culty of Sci	ence					
<b>Course ID:</b> TVc/11	ÚTVŠ/ C	Course name:	Sports Acti	vities III.			
Course typ Recomme Per week:	pe: Practice nded cours	d the method e-load (hours y period: 28 ent					
Number of	credits: 2						
Recommen	ded semest	er/trimester	of the cours	e: 3.			
Course leve	el: I., I.II., II	•					
Prerequisit	ies:						
Conditions	for course	completion:					
Learning o	utcomes:						
Brief outlin	e of the cou	irse:					
Recommen	ded literatu	ire:					
Course lang	guage:						
Course asso Total numb		ed students: 6	910				
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
89.84	0.04	0.0	0.0	0.0	0.03	4.23	5.86
Horbacz, Ph	D., Mgr. Dá	Čurgali, Mgr. ávid Kaško, N prof. RNDr. S	Igr. Zuzana	Küchelová, I	PhD., doc. Pa	edDr. Ivan	Uher, PhD.,
Date of last	modificati	on: 18.08.201	7				
Approved:	Guaranteep	rof. RNDr. St	anislav Voka	ál, DrSc.			

University:	P. J. Šafárik	University in	n Košice				
Faculty: Fa	culty of Scie	ence					
<b>Course ID:</b> TVd/11	ÚTVŠ/ C	ourse name:	Sports Acti	vities IV.			
Course typ Recommen Per week:	be: Practice	l the method e-load (hours y period: 28					
Number of	credits: 2						
Recommen	ded semeste	er/trimester	of the cours	<b>e:</b> 4.			
Course leve	e <b>l:</b> I., I.II., II						
Prerequisit	ies:						
Conditions	for course	completion:					
Learning o	utcomes:						
Brief outlin	e of the cou	irse:					
Recommen	ded literatu	ire:					
Course lang	guage:						
Course asse Total numb		ed students: 5	045				
abs	abs-A	abs-B	abs-C	abs-D	abs-E	n	neabs
85.09	0.3	0.04	0.0	0.0	0.0	6.82	7.75
Horbacz, Ph	D., Mgr. Dá	Čurgali, Mgr. ivid Kaško, N prof. RNDr. S	Igr. Zuzana	Küchelová, l	PhD., doc. Pa	edDr. Ivan	Uher, PhD.,
Date of last	modificatio	on: 18.08.201	7				
Approved:	Guaranteep	rof. RNDr. St	anislav Voka	ál, DrSc.			

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: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units use medical physics. Sources of ionizing radiation used in medicine - radionuclides and general photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (C IMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clir dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation protection and cur legislation.         Recommended literature:       1. Podorsak E.B. et al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of	Faculty: Faculty	of Science					
UKF/12       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: 1.         Course level: II.       Prerequisities:         Conditions for course completion:       Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brif outline of the course:       The basic concepts of medical physics. Medical physics, principles, values and units use medical physics. Sources of ionizing radiation used in medicine - radionuclides and general Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, aceclerators. Overview of methods of clir dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation protection and cur legislation.         Recommended literature:       1. Podorsak E.B., et al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0			amo. Introducto	ry Medical Physic	26		
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: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units used medicial physics. Sources of ionizing radiation used in medicine - radionuclides and general Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of methods of clir dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation protection and cur legislation.         Recommended literature:         1. Podorsak E.B., et al. : Radiation Oncology Physics , IAEA       2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Course assessment         Course assesed students: 6 <td colsp<="" td=""><td>UKF/12</td><td></td><td></td><td>ry Medical Filysio</td><td>28</td><td></td></td>	<td>UKF/12</td> <td></td> <td></td> <td>ry Medical Filysio</td> <td>28</td> <td></td>	UKF/12			ry Medical Filysio	28	
Number of credits: 4         Recommended semester/trimester of the course: 1.         Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units user medical physics. Sources of ionizing radiation used in medicine - radionuclides and general Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (C IMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clin dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation oncology. Radiobiology mo for prediction of the effects of ionizing radiation. Principles of radiation protection and cur legislation.         Recommended literature:       1.         1. Podorsak E.B., et al. : Radiation Oncology Physics , IAEA       2.         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins       Course assessment         Total number of assessed students: 6       A       B       C       D       E       FX         100.0	Course type: La Recommended Per week: 2 Per	ecture course-load (l r study period	hours):				
Course level: II.         Prerequisities:         Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units used medical physics. Sources of ionizing radiation used in medicine - radionuclides and generate Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (C IMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clir dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation protection and cur legislation.         Recommended literature:         1. Podorsak E.Bet al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0							
Prerequisities:         Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units use medical physics. Sources of ionizing radiation used in medicine - radionuclides and generat Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (CIMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clirr dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation oncology. Radiobiology mo for prediction of the effects of ionizing radiation. Principles of radiation protection and cur legislation.         Recommended literature:         1. Podorsak E.Bet al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0 <td>Recommended s</td> <td>emester/trime</td> <td>ester of the cour</td> <td>se: 1.</td> <td></td> <td></td>	Recommended s	emester/trime	ester of the cour	se: 1.			
Conditions for course completion:         Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units used medical physics. Sources of ionizing radiation used in medicine - radionuclides and generate Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (C IMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clim dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation protection and cur legislation.         Recommended literature:         1. Podorsak E.B.et al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0	Course level: II.	,					
Learning outcomes:         Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units used medical physics. Sources of ionizing radiation used in medicine - radionuclides and generate Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (CIMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clir dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation oncology. Radiobiology mo for prediction of the effects of ionizing radiation. Principles of radiation protection and cur legislation.         Recommended literature:         1. Podorsak E.B. et al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0       0.0       0.0       0.0	Prerequisities:						
Provide an overview of physical principles and methods of application of ionizing radiation in medicine - in the radiological diagnosis, nuclear medicine, radiation and principles of radiation protection against the effects of ionizing radiation.         Brief outline of the course:         The basic concepts of medical physics. Medical physics, principles, values and units used medical physics. Sources of ionizing radiation used in medicine - radionuclides and generat Photon interactions. Electron interactions. Interaction of protons, neutrons and heavy ions. rays and electron radiations of generators, accelerators. Overview of irradiation techniques (C IMRT, stereotactic therapy). Physical principles of brachytherapy. Review of methods of clim dosimetry, the principles of the detection and measurement of ionizing radiation. Therape techniques and applications of planning systems for radiation oncology. Radiobiology mo for prediction of the effects of ionizing radiation. Principles of radiation protection and cur legislation.         Recommended literature:       1. Podorsak E.B., et al. : Radiation Oncology Physics , IAEA         2. Kahn F.M.: The Physics of radiation Therapy ,Lippincott Williams and Wilkins         Course language:         Course assessment         Total number of assessed students: 6	Conditions for c	ourse complet	ion:				
Course language:         Course language:         Course assessment         Total number of assessed students: 6         A       B       C       D       E       FX         100.0       0.0       0.0       0.0       0.0       0.0	medicine - in the	-	iagnosis, nuclear		on and principles	s of radiation	
A         B         C         D         E         FX           100.0         0.0         0.0         0.0         0.0         0.0	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of	the effects of the course: opts of medica Sources of io ons. Electron i radiations of ic therapy). Ph rinciples of the applications of	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel hysical principles be detection and f planning system	on. cal physics, prind used in medicine raction of proton erators. Overviev of brachytherapy measurement of ns for radiation	ciples, values an - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiation oncology. Radio	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models	
A         B         C         D         E         FX           100.0         0.0         0.0         0.0         0.0         0.0	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of legislation. <b>Recommended I</b> 1. Podorsak E.B. 2. Kahn F.M.: Th	the effects of the course: opts of medica Sources of io ons. Electron i n radiations of ic therapy). Ph rinciples of th applications of the effects of iterature: .et al. : Radiati ne Physics of ra	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel hysical principles the detection and planning system ionizing radiation	on. cal physics, prind used in medicine raction of proton erators. Overview of brachytherapy measurement of ns for radiation on. Principles of	ciples, values an e - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiatio oncology. Radio radiation protect	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models tion and curren	
100.0 0.0 0.0 0.0 0.0 0.0	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of legislation. <b>Recommended li</b> 1. Podorsak E.B. 2. Kahn F.M.: Th <b>Course language</b>	the effects of the course: opts of medica Sources of io ons. Electron i radiations of ic therapy). Ph rinciples of th applications of the effects of iterature: .et al. : Radiati he Physics of ra e: ent	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel hysical principles detection and planning system ionizing radiation on Oncology Ph adiation Therapy	on. cal physics, prind used in medicine raction of proton erators. Overview of brachytherapy measurement of ns for radiation on. Principles of	ciples, values an e - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiatio oncology. Radio radiation protect	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models tion and curren	
	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of legislation. <b>Recommended li</b> 1. Podorsak E.B. 2. Kahn F.M.: Th <b>Course language</b> <b>Course assessme</b> Total number of	the effects of the course: opts of medica Sources of io ons. Electron i radiations of ic therapy). Ph rinciples of th applications of the effects of iterature: .et al. : Radiati he Physics of ra e: ent assessed studen	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel hysical principles the detection and c planning system ionizing radiation on Oncology Ph adiation Therapy	on. cal physics, prind used in medicine raction of proton erators. Overview of brachytherapy measurement of ns for radiation on. Principles of ysics , IAEA ,Lippincott Willi	ciples, values an - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiation oncology. Radio radiation protect ams and Wilkins	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models tion and curren	
Provides: doc. RNDr. Pavel Matula, CSc.	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of legislation. <b>Recommended II</b> 1. Podorsak E.B. 2. Kahn F.M.: The <b>Course language</b> Total number of the A	the effects of the course: opts of medica Sources of io ons. Electron i n radiations of ic therapy). Ph rinciples of th applications of the effects of iterature: .et al. : Radiati ne Physics of ra e: mt assessed studen B	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel hysical principles the detection and c planning system ionizing radiation on Oncology Ph adiation Therapy	Definition of proton of brachytherapy measurement of modiation of proton of brachytherapy measurement of ns for radiation on. Principles of principles of principles of the prince of th	ciples, values an - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiation oncology. Radio radiation protect ams and Wilkins E	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models tion and curren	
Date of last modification: 26.09.2017	medicine - in the protection agains <b>Brief outline of t</b> The basic conce medical physics. Photon interaction rays and electron IMRT, stereotact dosimetry, the p techniques and a for prediction of legislation. <b>Recommended It</b> 1. Podorsak E.B. 2. Kahn F.M.: The <b>Course language</b> <b>Course assessme</b> Total number of A 100.0	the effects of the course: opts of medica Sources of io ons. Electron i radiations of ic therapy). Ph rinciples of th applications of the effects of iterature: .et al. : Radiati he Physics of ra e: ent assessed studen B 0.0	iagnosis, nuclear ionizing radiation l physics. Media nizing radiation nteractions. Inte generators, accel pysical principles the detection and f planning system ionizing radiation on Oncology Ph adiation Therapy nts: 6 C 0.0	Definition of proton of brachytherapy measurement of modiation of proton of brachytherapy measurement of ns for radiation on. Principles of principles of principles of the prince of th	ciples, values an - radionuclides s, neutrons and l v of irradiation te y. Review of met ionizing radiation oncology. Radio radiation protect ams and Wilkins E	d units used in and generators heavy ions. X echniques (CRT thods of clinica on. Therapeutic biology models tion and curren	

University: P. J. Šafárik University in Košice         Faculty: Faculty of Science         Course ID: ÚFV/       Course name: Introduction to Experimental Methods in Nuclear Phy         UMJF/06       Course name: Introduction to Experimental Methods in Nuclear Phy         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: 1.       Course level: II.         Prerequisities:       Present	sics
Course ID: ÚFV/ UMJF/06       Course name: Introduction to Experimental Methods in Nuclear Phy         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: 1.	'sics
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: 1. Course level: II.	
Recommended semester/trimester of the course: 1. Course level: II.	
Course level: II.	
Prerequisities:	
Conditions for course completion: written tests and thesis exam	
<b>Learning outcomes:</b> Students will acquire basic knowlwdges on interactions of ionizing radiation in the matter a principles of acceleration and detection of elementary particles.	ind
<b>Brief outline of the course:</b> Accelerators of charged particles - linear and circular,colliding beams. Particle passage the matter. Energy loss of charged particles. Multiple scattering. Interactions of electron gamma radiation with matter. Transition radiation. Particle detection. Gaseous ionization det Scintillation detectors. Cherenkov detectors. Semiconductor detectors. Spectrometry of comparticles. Tracking detectors.	ns and ectors.
<ul> <li>Recommended literature:</li> <li>1 Kleinknecht K., Detectors for particle radiation, Cambridge, 1986.</li> <li>2 Fernow R.: Introduction to experimental particle physics, Cambridge, 1986.</li> <li>3 Leo W.R., Techniques for Nuclear and Particle Physics Experiments, Springer Verlag, N York Berlin Heidelberg, 1994.</li> <li>4 Grupen C.: Particle detectors, Cambridge, 1996.</li> <li>5 Slugeň V. a iní, Jadrovo-energetické zariadenia, STU Bratislava, 2003.</li> </ul>	lew
Course language: slovak and english	
Course assessment Total number of assessed students: 15	
A B C D E FX	Κ
73.33 20.0 0.0 6.67 0.0 0.	0
Provides: prof. RNDr. Stanislav Vokál, DrSc., doc. RNDr. Adela Kravčáková, PhD.	
Date of last modification: 26.09.2017	
Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.	

University: P. J. Ša	afárik Universi	ty in Košice			
Faculty: Faculty o	f Science				
<b>Course ID:</b> KPPaPZ/UPR/03	Course na	Course name: The Art of Aiding by Verbal Exchange			
Course type, scop Course type: Pra Recommended co Per week: 2 Per s Course method:	ctice ourse-load (ho study period:	ours):			
Number of credits	s: 2				
Recommended ser	mester/trimes	ter of the cours	<b>e:</b> 4.		
Course level: II.					
Prerequisities:					
Conditions for co	urse completio	)n:			
Learning outcome	es:				
Brief outline of th	e course:				
Recommended lite	erature:				
Course language:					
<b>Course assessmen</b> Total number of as		s: 49			
А	В	С	D	E	FX
85.71	4.08	2.04	2.04	2.04	4.08
Provides: Mgr. On	drej Kalina, Pl	nD.			
Date of last modif	ication: 21.08	.2017			
Approved: Guarar	nteeprof. RND	. Stanislav Voka	ál, DrSc.		

University: P. J.	Šafárik Univers	sity in Košice			
Faculty: Faculty	of Science				
Course ID: ÚFV VOM/09	V Course na	Course name: The Universe at Microscopic Level			
	.ecture l course-load (h er study period:	ours):			
Number of cred	lits: 3				
Recommended	semester/trimes	ster of the cour	se: 3.		
Course level: II					
Prerequisities:					
Conditions for o	course completi	ion:			
elementary part Brief outline of The lectures pro phases like qua structure of nov	icle level. the course: wide an insight i rk-gluon plasm wadays Universe	nto the microstr a, baryogenesis e: main sequenc	ucture of the Un and first nucles e stars, white d	iverse - starting w i creation and co warfs, neutron sta and cosmic rays.	ith early cosmic ontinue with the
2. D. Perkins: P	Introduction to E article Astrophy An Introduction t	sics, Oxford Un to the Theory of	iversity Press, O	I, Weinheim, 2004 xford, 2003 e and Evolution, C	
Course languag	e:				
Course assessm Total number of		nts: 17			
А	В	C	D	E	FX
100.0	0.0	0.0	0.0	0.0	0.0
		mbara PhD			•
Provides: doc. F	KNDr. Marek Bo	moara, 1 mD.			
Provides: doc. F					

University: P. J. Šafárik University in Košice					
Faculty: Faculty of Science					
<b>Course ID:</b> ÚFV/ ZDC/14	<b>Course name:</b> Introduction to particle detection by calorimetric methods				
Course type, scope a Course type: Lectur Recommended cour Per week: 2 Per stu Course method: pre	re rse-load (hours): dy period: 28				
Number of credits: 4					
Recommended seme	ster/trimester of the course: 2.				
Course level: II.					
Prerequisities:					
Conditions for cours	e completion:				
Learning outcomes:	toduction to partcle calorimetry.				
Electronic energy los in a single collision Stopping power at in low energies Energetic knock-on e Fluctuations in energy Multiple scattering th Photon and electron i Collision energy loss Critical energy, Energy Photonuclear and electron energy Cherenkov and transi Optical Cherenkov ra Coherent Cherenkov CALORIMETERS Principles of Calorim Electromagnetic and Shower Profiles and Electromagnetic calo Hadronic calorimeter Free electron drift ve Types of Calorimeter Compensating and no	nteractions in matter es by e±, Radiation length, Bremsstrahlung energy loss by e± gy loss by photons, Bremsstrahlung and pair production at very high energies ectronuclear interactions at still higher energies , Muon energy loss at high tion radiation diation radiation retry Hadronic Showers Containment rimeters s locities in liquid ionization chamber s: on-compensating npling, homogeneous				

Signal Detection

Shower shapes in hadron calorimeters

Fluctuations in hadronic energy measurements

Position resolution in the calorimeters

Shower maximum detectors

Signal read-out, processing, calibration of readout electronics. Physics calibration of electromagnetic and hadron calorimeters, jet reconstruction, determination of missing energy and that of the jet energy scale.(Getting from calorimetry to physics results) Energy and position resolution in calorimetry.

Energy and position resolution in calorimetry.

#### **Recommended literature:**

http://pdg.lbl.gov/2013/reviews/contents\_sports.html

http://indico.cern.ch/getFile.py/access?contribId=24&resId=0&materialId=slides&confId=44587 http://www.slidefinder.net/c/

calorimetry\_energy\_measurements\_prof\_robin/252b\_lecture8/27257380

http://www-ppd.fnal.gov/EPPOffice-w/Academic\_Lectures/DGreen.pd

phttp://www-group.slac.stanford.edu/sluo/lectures/detector\_lecture\_files/detectorlectures\_13.pd http://indico.cern.ch/getFile.py/access?contribId=24&resId=0&materialId=slides&confId=44587 http://www.kip.uni-heidelberg.de/atlas/seminars/WS2009\_JC/compensation1

Course language:

English

#### Course assessment

Total number of assessed students: 4

А	В	С	D	Е	FX
75.0	0.0	0.0	0.0	25.0	0.0

**Provides:** doc. RNDr. Jozef Urbán, CSc., doc. RNDr. Dušan Bruncko, CSc., RNDr. Pavol Stríženec, CSc.

**Date of last modification:** 22.02.2018

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.

University: P. J. Š	afárik Universi	ty in Košice			
Faculty: Faculty of	of Science				
<b>Course ID:</b> ÚFV/ ZMSE/07	Course na	<b>Course name:</b> Introduction to Simulations and Modeling of Experiments			
Course type, scop Course type: Lea Recommended o Per week: 2 / 1 H Course method:	cture / Practice course-load (ho Per study perio	ours):			
Number of credit	s: 4				
Recommended se	mester/trimest	ter of the cours	e: 2.		
Course level: II.					
Prerequisities:					
Conditions for co	urse completio	on:			
Introduce the basi energy physics pro <b>Brief outline of th</b> Mathematical fou Comparisons of M (random numbers simulations of hig	ocesses. ne course: undations of M fonte-Carlo into , random numb	onte-Carlo met egrations with n ers generation, 1	hods. Buffon's	needle and basic ture. Random nur	MC methods
Recommended life James F.: Monte-O preprint DD/80/6, http://placzek.hom http://en.wikipedi	Carlo theory and February 1980 ne.cern.ch/placz	zek/lectures,		1980, s. 1145-118	9; Cern
Course language:					
<b>Course assessme</b> Total number of a		s: 9			
A	В	С	D	Е	FX
66.67	11.11	0.0	0.0	22.22	0.0
Provides: doc. RN	IDr. Jozef Urbá	n, CSc.		<u> </u>	
Date of last modi	fication: 26.09.	.2017			

University: P. J. Šafárik University in Košice						
Faculty: Faculty of Science						
<b>Course ID:</b> ÚTVŠ/ ÚTVŠ/CM/13	Course name: Seaside Aer	obic Exercise				
Course type: Practic Recommended cour Per week: Per stud	Course type, scope and the method: Course type: Practice Recommended course-load (hours): Per week: Per study period: 36s Course method: present					
Number of credits: 2						
Recommended seme	ster/trimester of the course	2:				
Course level: I., II.						
Prerequisities:						
	Conditions for course completion: Conditions for course completion:					
Learning outcomes: Learning outcomes: Students will be provided an overview of possibilities how to spend leisure time in seaside conditions actively and their skills in work and communication with clients will be improved. Students will acquire practical experience in organising the cultural and art-oriented events, with the aim to improve the stay and to create positive experiences for visitors.						
<ul> <li>Brief outline of the course:</li> <li>Brief outline of the course:</li> <li>1. Basics of seaside aerobics</li> <li>2. Morning exercises</li> <li>3. Pilates and its application in seaside conditions</li> <li>4. Exercises for the spine</li> <li>5. Yoga basics</li> <li>6. Sport as a part of leisure time</li> <li>7. Application of projects of productive spending of leisure time for different age and social groups (children, young people, elderly)</li> <li>8. Application of seaside cultural and art-oriented activities in leisure time</li> </ul>						
Recommended literature:						
Course language:						
Course assessment Total number of assessed students: 33						
	abs n					
	12.12 87.88					
Provides: Mgr. Alena Buková, PhD., Mgr. Agata Horbacz, PhD.						
Date of last modification: 18.08.2017						

Approved: Guaranteeprof. RNDr. Stanislav Vokál, DrSc.