LITHUANIAN SPORTS UNIVERSITY

STUDY MODULE PROGRAMME (SMP)

Module Code		В	580	М	004		Accredited	2025	06	01 Renewal date					
WIO	dule Code	Branch of	Science	Progr.	Registr. N	№.	until	2023	00	01					
Enti	tlement														
Biol	ogy and Ger	netics of Sk	eletal Mu	scle											
Prer	equisites														
Basi	Basic knowledge in Kinesitherapy (Physiotherapy), Sports Sciences, Biomedicine and/or Biology at the level														
of B	of Bachelor														
Cou	rse (module)	Learning	Outcomes												
№.	Learning C	outcomes				Te M	eaching / Learn ethods	ing		Asse Metl	essmer hods	nt			
1	to find and are develop interdiscipl	understand bed based o inary resea	l modern 1 n fundam rch and ev	esearch i ental and vidence-b	deas that applied based	Individual project, Literature analysis, One-to-one tutorials Problem-based Paper									
	practice.					lea									
2	To integrat biomedical forsee way independer	e knowledg sciences a s to solve r at research.	ge generat nd researc elevant pr	ed by mo h method oblems b	dern lology, ased on	Di Sc Se	scussion, Grou eientific paper a eminar, Team p	ip work, analysis, roject	,	Oral Scie (text	present presen	ntation paper ysis	n,		
3 To generate original ideas which could be be developed and defended under new conditions sa well as in the process of development of new interventions and technologies.							ase analysis (Ca teractive lectur terature analys oblem-based le	Test	`est						
4	To develop kinesiother training.	o new interv apy, health	ventions ir promotio	innovati n and spo	ons in orts	In on tu	teractive lectur le tutorials, Sm torials	Examination							
Mai	n aim														
To e reha	equip student bilitation, he	ts with abilities alth prome	ity to appl tion and s	y knowle ports.	dge about	skel	letal muscle bio	ology an	id gen	etics	in prac	ctise f	or		
Sum	mary														
The	main aim of	the model	is to equip	p student	s with abili	ity t	o apply knowle	edge abo	out ske	eletal	muscl	e biol	ogy		
and	genetics in p	practise for	rehabilita	tion, heal	th promoti	on a	and sports. The	module	cove	rs the	follov	ving			
topic	cs about skel	letal muscle	es: (1) Mu	scle prote	eins ir cont	ract	ion mechanism	1, (2) ge	ne exp	pressi	on and	1			
trans	slation as ba	sis for adap	tation to 1	nedical ii	ntervention	is ar	id exercise trai	ning (3)	meta	bolist	n, (4)	1			
mau	radion and a	igeing, (5)	nuscie str	engtnenn	ng mechan	18111	s and technolog	gies (o)	Skele	lai mi	iscle d	amag	e		
Love	al of module	-													
	aval of proc	ramma													
Cyc	le T	ype	- 5	lubject gr	oup (under	r the	e regulation of	the area)		Subje	ect lev	/el		
Seco	ond N	laster	Bendro	o univers	sitetinio lav	viniı	no			Ι	Deeper	ning			
Grou	up under fina	ancial class	ification							•					
Sylla	abus														
№. Sections and themes										Resp	onsibl	e lecti	urer		
1.	Proteins, st	ructure and	l contracti	on mecha	anism of sk	cele	tal muscles								
2.	Gene trans	cription and	d translati	on <u>s as</u> ba	sis <u>for</u> ada	ptati	on to intervent	ions							
3.	Substrate a	nd energy	metabolis	m in skel	etal muscle	es									
4.	Maturation	and ageing	g of skelet	al muscle	es										
5.	Mechanisn	ns and tech	nologies c	of strengtl	n training										

N⁰.	Sections and themes	Responsible lecturer
6.	Damage of skeletal muscle and connective tissue	

Evaluation procedure of knowledge and abilities:

References

№.		Title	Edit Lithuani Univers Pressmark	ion in an Sports ity library Number of exemplars	In Lithuanian Sports University bookstore	Number of ex. in the methodical cabinet of the depart.							
1.	Kavitha Mukund, A review of molec disease. Wiley Inte Jan;12(1):e1462. d 13. Review.	Shankar Subramaniam. Skeletal muscle: cular structure and function, in health and erdiscip Rev Syst Biol Med. 2020 loi: 10.1002/wsbm.1462. Epub 2019 Aug			No								
2.	Comment: Freely accesible: doi: 10.1002/wsbm.1462. Egan B, Zierath JR. Exercise Metabolism and the Molecular Regulation of Skeletal Muscle Adaptation. Cell Metabolism 17, February 5, 2013 http://dx.doi.org/10.1016/j.cmet.2012.12.012												
	<i>Comment: Freely a</i> Lars Larsson, Han Young il Lee, Wes	accesiblle: http://dx.doi.org/10.1016/j.cme s Degens, Meishan Li, Leonardo Salviati, sley Thompson James L Kirkland and	t.2012.12.0	012									
3.	Marco Sandri. SA OF MUSCLE MA 427–511, 2019 Pu doi:10.1152/physr	RCOPENIA: AGING-RELATED LOSS SS AND FUNCTION. Physiol Rev 99: blished November 14, 2018; ev.00061.2017		No									
	Comment: Freely accesible: doi:10.1152/physrev.00061.2017												
4.	Comment: Freely accesible: doi:10.1152/physrev.00061.2017 Romagnoli C., Pampaloni B. Brandi ML. Muscle endocrinology and its relation with nutrition. Aging Clinical and Experimental Research 2019 https://doi.org/10.1007/s40520-019-01188-5												
	Comment: Freely A	Accessible: https://doi.org/10.1007/s40520)-019-0118	8-5.									
Add	itional literature												
N <u>∘</u> .	Title												
Coor	dinating lecturer												
	Position	Degree, surname, name			Schedule N	<u>lo</u> .							
	Professor				459								
Subc	11V1S10n												
		Entitlement				Code							
						2001							

Study module teaching form №. 1

							Structu	ure			т	oto1		
Semester		Mode	of st	udies	Theory		Seminare	L	ab	Ind.	hours		Cre	dits
					Theo	I y	Seminars	W	orks	work	ш	Juis		
Α	S		D		15		15		0 230		2	60	60 10	
Language	s of inst	ruction:												
Lithuania	an L	English	Е	Russia	n R		French	F		German	G		Other	Oth.

Plan of in-class hours

Ma of Thomas		Academic h	ours	Mo of Thomas	Academic hours								
Nº. 01 Themes	Theory	Seminars	Lab Works	Jvº. of Themes	Theory	Seminars	Lab Works						
1.	2	2	0	4.	2	2	0						
2.	3	3	0	5.	5	5	0						
3.	2	2	0	6.	1	1	0						
				Total:	15	15	0						

Schedule of individual work tasks and their influence on final grade

	No of avilation	Total	Influence on grade, %		Week of presentment of task (*) and reporting (o)													
	nº. of syllabus	hours			2	34	5	6	7	89	10	11	12	13	14	15	16	17-20
Literature analysis	1,2,3,4	60	15	*						0								
Oral presentation	1,2,34	10	15	*									0					
Test	70	70	20	*											0			
Exam	5,6	90	50	*													0	
Total:	-	230	100															

Study module teaching form №. 2

						Structure												<u>_1</u>				
Semester	M	Mode of studies					⁷ Seminars			Lab Works			V	Ind voi	l. :k]	hou	rs		Cr	edits	
A S]	N		15		15	í			0			23	0		260	0		10		
Languages of inst																						
Lithuanian L	Engli	sh	E	Russia	n R	F	rei	ncl	h	F		German				G			0	Other O		
Plan of in-class h	Plan of in-class hours																					
No. of Thomas		Acad	demic h	nours		Ma	~f	тե		• • •					A	Acad	lem	ic h	ours			
Jvº. of Themes	Theory	Ser	ninars	Lab	Works	JN <u>₽</u> .	01	of Themes			T	heo	ory Semin			nina	rs Lab V			Works		
1.	2		2		0	4.							2				2			0		
2.	3	3 3			0			5.					5				5			0		
3.	2		2		0		6.			1				1			0		0			
						Total:				1:	15				15			0		0		
Schedule of indiv	idual work	c task	and t	heir infl	luence or	n final	l gi	rac	le													
	No of gull	abua	Total	Influona	o on oro	da 0/	W	'ee	ek o	of	pre	sen	tm	en	t of	f task (*) an				d reporting (o)		
	JNº. OI SYII	labus	hours	mnuenc	e on gra	ade, %		23	34	5	67	78	9	10	11	12	13	14	15	16	17-20	
Oral presentation	10		15		0		*		0													
Test	70		20		0		*					0										
Literature analysis	1,2,3,4	4	15		0		*											0				
Exam	5,6		90		50		*													0		
Total:	-		140		50																	