



LITHUANIAN SPORTS UNIVERSITY

STUDY MODULE PROGRAMME (SMP)

Module Code	B	440	B	047	Accredited until				Renewal date		
	Branch of Science		Progr.	Registr. №.							

Entitlement

Biochemistry and Nutrition

Prerequisites

Basic knowledge of biology

Course (module) Learning Outcomes

№.	Learning Outcomes	Teaching / Learning Methods	Assessment Methods
1		Exercise classes, Team project,	Case analysis (study), Control work
2		Discussion, Laboratory classes, Literature analysis, Problem-based learning	Oral presentation
3		Case analysis (Case study), Discussion, Literature review presentation	Literature reviewing and presentation
4		Discussion, Laboratory classes, Scientific paper analysis, Seminar,	Case analysis (study), Control work, Literature reviewing and presentation

Main aim

To promote personal and professional development of students in relation to communication skills, ability to apply recent scientific evidence considering impact of life style modification including changes in nutrition.

Summary

This module the focus is on principles and essentials of human nutrition, biochemistry with the main purpose of helping the students to develop a holistic and integrated understanding of this complex multifaceted scientific domain. Students will have understanding of the basics of the subject, the properties and sources of nutrient, and have focused attention upon how nutrition-related factors shape human health and disease across all stages of the life.

Level of module

Level of programme		Subject group (under the regulation of the area)
Cycle	Type	
First	Bachelor	Bendrojo universitetinio lavinimo

Group under financial classification

Syllabus

№.	Sections and themes	Responsible lecturer
1.	Introduction	
2.	Proteins clasification, metabolism.	
3.	Enzyms. Coenzymes and cofactors	
4.	Functions of carbohydrates, metabolism	
5.	Vitamins and functions.	
6.	Lipids functions and metabolism.	
7.		
8.	Energy requirement, nutrition evaluetion methods, nutrition analysis	
9.		
10.		
11.		

Evaluation procedure of knowledge and abilities:

References

№.	Title	Edition in Lithuanian Sports University library		In Lithuanian Sports University bookstore	Number of ex. in the methodical cabinet of the depart.
		Pressmark	Number of exemplars		
1.	Gibney M., Vorster H., Kok J. 2002 Introduction to Human Nutrition ISBN 0-63205624-x Oxford, UK			No	
2.	Praškevičius, A., Biochemija, LSMU, 2016		25	No	1
3.	R. Lažauskas. Mityba ir sveikata. 2005 Mityba ir sveikata ISBN9955-15-040-8 KMU, Kaunas		15	No	
4.	.Jeukendrup, M. Gleeson 2016 Sport Nutrition Human Kinetic, USA		1	No	1
5.	J. Kadziauskas, 2012, Biochemijos pagrindai, Vilniaus universitetas			No	1
6.	K. Ahern, I Rojagopal, T.Tan, 2018, Biochemistry, Oregon State University, USA			No	
7.	Burke et al. 2023 https://doi.org/10.1136/bjsports-2023-107335			No	
8.	Ackerman et al. 2023 https://doi.org/10.1136/bjsports-2023-107359			No	
9.	Jäger et al. 2018 https://doi.org/10.1186/s12970-017-0177-8			No	
10.	Hargreaves & Spriet 2020 https://doi.org/10.1038/s42255-020-0251-4			No	

Additional literature

№.	Title
1.	McBride A, Hardie DG. AMP-activated protein kinase: a sensor of glycogen as well as AMP and ATP? Acta Physiol. 2009;196:99–113.
2.	eff S. Volek, Timothy Noakes, Stephen D. Phinney (2015) Rethinking fat as fuel for endurance exercise European Journal of Sport Science, Vol.15, No 1, 13-20
3.	D.Mikalauskaitė. 1999 Suaugusių žmonių energijos apykaita ir fiziologiniai maisto medžiagų poreikiai. V
4.	David B. Pyne, Nicholas P. West, Amanda J. Cox, Allan W. Cripps (2015) Probiotics supplementation for athletes-Clinical and physiological effects. European Journal of Sport Science, Vol.15, No 1, 63-72.
5.	Haulsen G, Cumming KT, Holden G, et al. Vitamin C and E supplementation hampers cellular adaptation to endurance training in humans: a double-blind, randomised, controlled trial. J Physiol. 2014;592:1887–1901.
6.	Jeukendrup 2014 https://doi.org/10.1007/s40279-014-0148-z
7.	Clénin et al. 2015 https://doi.org/10.4414/smw.2015.14196
8.	Sim et al. 2019 https://doi.org/10.1007/s00421-019-04157-y
9.	Hargreaves & Spriet 2020 https://doi.org/10.1038/s42255-020-0251-4
10.	Burke et al. 2023 https://doi.org/10.1136/bjsports-2023-107335

Coordinating lecturer

Position	Degree, surname, name	Schedule №.

Subdivision

Entitlement	Code

Study module teaching form №. 1

Semester	Mode of studies	Structure	Credits
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			Theory	Seminars	Lab Works	Ind. work	Total hours	
A	S	D	13	14	3	100	130	5

Languages of instruction:

Lithuanian	L	English	E	Russian	R	French	F	German	G	Other	Oth.
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Plan of in-class hours

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
1.	2	0	0	7.	1	1	0
2.	1	2	1	8.	1	1	0
3.	1	1	0	9.	2	2	0
4.	1	2	1	10.	1	1	0
5.	1	1	0	11.	1	2	0
6.	1	1	1				
				Total:	13	14	3

Schedule of individual work tasks and their influence on final grade

	№. of syllabus	Total hours	Influence on grade, %	Week of presentment of task (*) and reporting (o)																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17-20
Control work	1-4	20	20	*				0												
Oral presentation	1-7	20	20	*				0												
Control work	4-6	20	20	*					0											
Case analysis (study)	1-11	20	20	*								0								
Literature reviewing and presentation	7-9	20	20		*												0			
Total:	-	100	100																	

Study module teaching form №. 2

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	N	13	14	3	100	130	5

Languages of instruction:

Lithuanian	L	English	E	Russian	R	French	F	German	G	Other	Oth.
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Plan of in-class hours

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
1.	2	0	0	7.	1	1	0
2.	1	2	1	8.	1	1	0
3.	1	1	1	9.	2	2	0
4.	1	2	0	10.	1	1	0
5.	1	1	0	11.	1	2	0
6.	1	1	1				
				Total:	13	14	3

Schedule of individual work tasks and their influence on final grade

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				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17-20
Oral presentation	1-7	20	20	*	0															
Control work	1-4	20	20	*		0														
Control work	4-6	20	20	*							0									
Literature reviewing and presentation	7-9	20	20	*								0								
Case analysis (study)	1-11	20	20	*									0							

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