



LITHUANIAN SPORTS UNIVERSITY

STUDY MODULE PROGRAMME (SMP)

Module Code	B	580	M	003	Accredited until	2020	06	01	Renewal date		
	Branch of Science		Progr.	Registr. №.							

Entitlement

Skeletal Muscles and Motor Control

Prerequisites

Course (module) Learning Outcomes

№.	Learning Outcomes	Teaching / Learning Methods	Assessment Methods
1		Group work, Problem-based learning, Scientific paper analysis	Essay
2		Practical exercises (tasks)	Laboratory examination

Main aim

Based on fundamental and applied sciences achievements provide students with knowledge and skills : a) to examine and analyse muscle adaptation phenomena ; b) to study and analyse the motor control mechanisms

Summary

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Level of module

Level of programme		Subject group (under the regulation of the area)	Subject level
Cycle	Type		
Second	Master	Bendrojo universitetinio lavinimo	Deepening

Group under financial classification

Syllabus

№.	Sections and themes	Responsible lecturer
1.		459 prof. Aivaras Ratkevičius
2.		459 prof. Aivaras Ratkevičius
3.		459 prof. Aivaras Ratkevičius
4.		347 doc. dr. Nerijus Masiulis (negeras tab)
5.		347 doc. dr. Nerijus Masiulis (negeras tab)
6.		347 doc. dr. Nerijus Masiulis (negeras tab)
7.		347 doc. dr. Nerijus Masiulis (negeras tab)
8.		459 prof. Aivaras Ratkevičius
9.		347 doc. dr. Nerijus Masiulis (negeras tab)
10.	Muscle-tendon adaptation to strenuous exercise	111 prof. dr. Sigitas Kamandulis
11.		347 doc. dr. Nerijus Masiulis (negeras tab)
12.		347 doc. dr. Nerijus Masiulis (negeras tab)
13.	Models for motor control	195 doc. dr. Dalia Mickevičienė
14.	Motor control: diferent research methods	195 doc. dr. Dalia Mickevičienė

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		

№.	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.	Skurvydas A. Judesių mokslas: raumenys, valdymas, mokymas, reabilitavimas, sveikatinimas, treniravimas, metodologija // Kaunas, LKKA, 2011.			Yes	
2.	Latash, M.L. Neurophysiological Basis of Movement // Champaign, Illinois: Human Kinetics, 2008.			No	1
3.	Enoka, R. Neuromechanics of Human Movement // Champaign, Illinois: Human Kinetics, 2008.			No	1
4.	Stergiou, N. Innovative Analyses of Human Movement. – Champaign, Illinois: Human Kinetics, 2004.			No	1
5.	Franklin, D.W., Wolpert, D.M. Computational mechanisms of sensorimotor control // Neuron. 2011, 3;72(3):425-42. IF: 14.9.			No	1
6.	Schiaffino S., Reggiani C. Fiber types in mammalian skeletal muscles // Physiol Rev. 2011; 91(4):1447-531. IF: 28.			No	1
7.	Nishikawa, K., Biewener, A.A., Aerts, P., Ahn, A.N. et al. Neuromechanics : an integrative approach for understanding motor control // Integrative and Comparative Biology, 2007, 47 (1): 16-54. IF: 2.6.			No	1
8.	Roger N. Lemon. Descending Pathways in Motor Control // Annual Review of // Neuroscience, 2008, Vol. 31, 195-218. IF: 26.7.			No	1
9.	Braun T, Gautel M. Transcriptional mechanisms regulating skeletal muscle differentiation, growth and homeostasis // Nat Rev Mol Cell Biol. 2011, 12(6):349-61. IF: 38.6.			No	1
10.	Timmons J.A. Variability in training-induced skeletal muscle adaptation // J Appl Physiol. 2011, 110(3):846-53. IF: 4.			No	1

Additional literature

№.	Title
1.	Lang T, Streeper T, Cawthon P, Baldwin K, Taaffe DR, Harris TB. Sarcopenia: etiology, clinical consequences, intervention, and assessment // Osteoporos Int. 2010, 21(4):543-59. IF: 4.9.
2.	Westerblad H, Bruton JD, Katz A. Skeletal muscle: energy metabolism, fiber types, fatigue and adaptability // Exp Cell Res. 2010, 1;316(18):3093-9. IF: 3.7.
3.	Allen DG, Lamb GD, Westerblad H. Skeletal muscle fatigue: cellular mechanisms // Physiol Rev. 2008, 88(1):287-332. IF: 16.
4.	Ranatunga KW, Roots H, Pinniger GJ, Offer GW. Crossbridge and non-crossbridge contributions to force in shortening and lengthening muscle // Adv Exp Med Biol. 2010;682:207-21. IF: 1.5
5.	Rome LC. Design and function of superfat muscles: new insights into the physiology of skeletal muscle // Annu Rev Physiol. 2006;68:193-221. IF: 37.7.
6.	MacIntosh BR, Shahi MR. A peripheral governor regulates muscle contraction // Appl Physiol Nutr Metab. 2011;36(1):1-11. IF: 2.3.
7.	Taylor JL, Gandevia SC. A comparison of central aspects of fatigue in submaximal and maximal voluntary contractions // J Appl Physiol. 2008; 104(2):542-50. IF: 4.
8.	Morelli V. Fatigue and chronic fatigue in the elderly: definitions, diagnoses, and treatments // Clin Geriatr Med. 2011, 27(4):673-86. IF: 1.7.
9.	Langdon DW. Cognition in multiple sclerosis // Curr Opin Neurol. 2011, 24(3):244-9. IF: 5.4.

