LITHUANIAN SPORTS UNIVERSITY

STUDY MODULE PROGRAMME (SMP)

Module Code	H	155	M	004	Accredited until	2020	06	01	Renewal date		
	Branch of Science		Progr.	Registr. №.							

Entitlement

Neuroscience

Prerequisites

Completed bachelor studies

Course (module) Learning Outcomes

№.	Learning Outcomes	Teaching / Learning Methods	Assessment Methods
1	Critically evaluate professional practice strengths and weaknesses, anticipate opportunities for professional development.	Creativity workshops, Discussion, Idea (mind) mapping	Essay, Individual work
2	Select and implement the most effective solutions to professional problems.	Discussion, Idea (mind) mapping, Library / information retrieval tasks, Literature analysis, Literature review presentation, Problem-based learning, Scientific paper analysis	Individual work
3	Formulate research-related issues, provide methods of investigation and plan research activities.	Discussion, Idea (mind) mapping, Library / information retrieval tasks, Literature analysis, Literature review presentation, Problem-based learning, Scientific paper analysis	Essay, Individual work
4	Analyse, assess and interpret investigation results through different theoretical paradigms	Discussion, Idea (mind) mapping, Library / information retrieval tasks, Literature analysis, Literature review presentation, Problem-based learning, Scientific paper analysis	Essay, Examination, Individual work

Main aim

On the basis of the modern fundamental and applied scientific achievements of the neuroscience, to provide students with the knowledge and skills: a) to understand principles of contemporary neuroscience, enabling better understanding the human cognitive functions and their development technologies; b) to test and analyze cognitive functions in various physical activity and sport conditions; c) to systematize modern fundamental and applied scientific achievements of the neuroscience and motor science and, according applied research to develop and train cognitive functions integrating sensomotor, self-control, sensory, social, cognitive, emotions and stress origin and removal mechanisms.

Summary

Neuroscience achievements of the world are accelerating a wide range of fields. Neuroscience increasingly can help answer questions about people and their behavior. On the basis of the modern fundamental and applied scientific achievements of the neuroscience, to provide students with the knowledge and skills: a) to understand principles of contemporary neuroscience, enabling better understanding the human cognitive functions and their development technologies; b) to test and analyze cognitive functions in various physical activity and sport conditions; c) to systematize modern fundamental and applied scientific achievements of the neuroscience and motor science and, according applied research to develop and train cognitive functions integrating sensomotor, self-control, sensory, social, cognitive, emotions and stress origin and removal mechanisms.

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.	Self-control and executive function	52 prof. habil.dr. Albertas Skurvydas
2.	Learning neuroscience	52 prof. habil.dr. Albertas Skurvydas
3.	Physical activity and cognitive function	2251 H. Budde
4.	Stress and neuroscience	52 prof. habil.dr. Albertas Skurvydas
5.	Decision-making and neuroscience	607 dr. Dovilė Valančienė
6.	Brain training and neuroscience	52 prof. habil.dr. Albertas Skurvydas

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.	Skurvydas A. Modernioji neuroreabilitacija: judesių valdymas ir proto treniruotė // Kaunas, LKKA, 2011.	612.7 Sk93		Yes	
2.	Gazzaniga M., Ivry RB., Mangun G.R. Cognitive Neuroscience: the Biology of the Mind. New York: W.W.Norton, 2014.			No	
3.	Deng W., Aimone J.B., Gage F.H. New neurons and new memories: how does adult hippocampal neurogenesis affect learning and memory? // Nat Rev Neurosci. 2010, 11(5):339-50. IF:29.5.			No	
4.	Hillman CH, Erickson KI, Kramer AF. Be smart, exercise your heart: exercise effects on brain and cognition // Nat Rev Neurosci. 2008;9(1):58-65. IF: 29.5.			No	
5.	Lee D., Seo H., Jung M.W. Neural Basis of Reinforcement Learning and Decision Making // Annu Rev Neurosci. 2012. IF: 26.7			No	
6.	Iacoboni M. Imitation, empathy, and mirror neurons // Annu Rev Psychol. 2009; 60:653-70. IF: 22.7.			No	
7.	Kennerley S.W., Walton M.E. Decision making and reward in frontal cortex: complementary evidence from neurophysiological and neuropsychological studies // Behav Neurosci. 2011, 125(3):297-317. IF: 2.8			No	
8.	Monterosso J., Piray P., Luo S. Neuroeconomics and the Study of Addiction // Biol Psychiatry. 2012. IF: 8.7.			No	
9.	Mayes A.R, Roberts N. Theories of episodic memory // Philos Trans R Soc Lond B Biol Sci. 2001, 29;356(1413):1395-408. IF: 6.			No	
10.	Binder J.R., Desai R.H. The neurobiology of semantic memory // Trends Cogn Sci. 2011; 15(11):527-36. IF: 10.			No	
11.	Wilhelm I., Prehn-Kristensen A., Born J. Sleep-dependent memory consolidation – What can be learnt from children? // Neurosci Biobehav Rev. 2012. IF: 9.			No	
12.	Shipstead Z, Redick TS, Engle RW. Is Working Memory Training Effective? // Psychol Bull. 2012. IF: 12.			No	

№.	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		
13.	van Kesteren M.T., Ruiter D.J., Fernández G., Henson R.N. How schema and novelty augment memory formation // Trends Neurosci. 2012;35(4):211-9. IF: 13.2.			No	
14.	Dudai Y. The Restless Engram: Consolidations Never End // Annu Rev Neurosci. 2012. IF: 27.			No	
15.	Schultz W. Multiple Dopamine Functions at Different Time Courses // Annual Review of Neuroscience Vol. 30 (2007): 259-288. IF: 27.			No	
16.	Yarrow K., Brown P., Krakauer J.W. Inside the brain of an elite athlete: the neural processes that support high achievement in sports // Nat Rev Neurosci. 2009, 10(8):585-96. IF: 29.5.			No	
17.	Jolles D.D., Crone E.A. Training the developing brain: a neurocognitive perspective // Front Hum Neurosci. 2012;6:76. IF: 1.5.			No	
18.	Smith EE., Kosslyn SM. Cognitive Psychology. Mind and Brain. New Jersy: Pearson Prentice Hall, 2007.			No	

Additional literature

№.	Title
1.	Northoff G. What is neuroethics? Empirical and theoretical neuroethics // Curr Opin Psychiatry. 2009;22(6):565-9. IF: 3.5.

Coordinating lecturer

Position	Degree, surname, name	Schedule №.
Professor	Prof. Dr. Hab. Albertas Skurvydas	52

Subdivision

Entitlement	Code
a	2006

Study module teaching form №. 1

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	D	13	13	0	234	260	10

Languages of instruction:

Lithuanian	L	English	E	Russian	R	French	F	German	G	Other	Oth.

Plan of in-class hours

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
				Total:	0	0	0

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
Individual Homework	1-6	74	30	*															0	
Essay	1-6	40	10	*															0	

	№. 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
Exam	1-6	120	60	*																0
Total:	-	234	100																	

Study module teaching form №. 2

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	N	13	13	0	234	260	10

Languages of instruction:

Lithuanian	L	English	E	Russian	R	French	F	German	G	Other	Oth.

Plan of in-class hours

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
				Total:	0	0	0

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
Individual Homework	1-6	74	30	*															0	
Essay	1-6	40	10	*															0	
Exam	1-6	120	60	*																0
Total:	-	234	100																	

Study module teaching form №. 3

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	D	13	13	0	234	260	10

Languages of instruction:

Lithuanian	L	English	E	Russian	R	French	F	German	G	Other	Oth.

Plan of in-class hours

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
				Total:	0	0	0

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
Individual Homework	1-6	74	30	*															0	
Essay	1-6	40	10	*															0	
Exam	1-6	120	60	*																0
Total:	-	234	100																	