LITHUANIAN SPORTS UNIVERSITY

STUDY MODULE PROGRAMME (SMP)

Module Code	B	710	B	074	Accredited until				Renewal date		
	Branch of Science		Progr.	Registr. №.							

Entitlement

Aquatherapy

Prerequisites

Modules of biomedical sciences, basics of physiotehrapy.

Course (module) Learning Outcomes

№.	Learning Outcomes	Teaching / Learning Methods	Assessment Methods
1	Find a scientific justification for the applied physical agents, aquatic therapy techniques.	Formal lecture, Group work, Literature analysis, Problem-based learning, Scientific paper analysis	Examination, Literature reviewing and presentation, Test
2	Adapt to new situations and make responsible, evidence based decisions applying physical therapy and aquatic therapy techniques	Group work, Practical exercises (tasks), Problem-based learning	Case analysis (study), Reporting for practice work
3	Find and apply new and effective physical agents therapy, aquatic therapy methods and means.	Exercise classes, Formal lecture	Case analysis (study), Reporting for practice work
4	Determine physiotherapy diagnosis and physiotherapy need based on cardiovascular function, functional mobility findings.Recognise signs and symptoms of diseases and conditions, define contraindications for aquatic therapy.	Formal lecture, Literature analysis	Case analysis (study), Examination, Test
5	Develop a plan of aquatic therapy approaches. Apply and adjust modern aquatherapy methods (Halliwick approach, Ai Chi, Watsu, Bad Ragaz Ring).	Case analysis (Case study), Group work	Case analysis (study), Reporting for practice work

Main aim

Find a scientific justification for the applied methodology, make responsible and evidence based decisions applying aquatic therapy in neuromusculoskeletal, geriatric, pediatric and cardiorespiratory rehabilitation.

Summary

Students acquire knowledge about the evidence based aquatic therapy, the key principles of different techniques and contraindications. Practical skills in aquatic therapy are developed. Analysis of clinical cases is performed and the individualized physiotherapy plan including most effective aquatic therapy techniques is developed.

Level of module

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

Group under financial classification

9.Reabilitacija ir slauga, sportas (išskyrus trenerius)

Syllabus

№.	Sections and themes	Responsible lecturer
1.	History of Aquatic healing. Modern origins, status of aquatic therapy. Indications and advantages. Contraindications and precautions. Pool facilities.	
2.	Physical properties of water. Fluid dynamic properties of water.	
3.	Physiological responses to immersion and Aquatic exercise.	

№.	Sections and themes	Responsible lecturer
4.	Phylosophy and Technique elements. The Halliwick Concept.	
5.	Bad Ragaz Ring method, Ai Chi and Watsu.	
6.	Swim stroke training and modification for rehabilitation.Safety in water. Vital signs. Aqua programming and progression.	
7.	Getting to know the physical properties of water.	
8.	Sagittal rotation control.	
9.	vertical rotation control.	
10.	Lateral rotation control.	
11.	Combined rotation control.	
12.	Upthrust, mental inversion.	
13.	Balance is stillness.	
14.	watsu method	
15.	Simple progression.	
16.	Ai Chi method.	
17.	Deep water running.	
18.	Vertical traction in water.	
19.	Water aerobic.	
20.	Designing Aqua therapy plan for people with diffrerent problems.	
21.	Application of Halliwick's Concept / Case Studies / analysis of scientific articles	

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.	Brody, L.T.,Geigle P.R. (2009). Aquatic exercise for rehabilitation and training. Human Kinetics.	797.2 Aq-01	1	Yes	
2.	Еремин, И.В.,Чебытова, Л.А. (2012). Гидрокинезитерапия. Ставрополь.			No	1
3.	Лоуренс, Д. (2000). Аквааэробика. Упражнения в воде. Москва.			No	1
4.	Marinho-Buzelli, A. R., Bonnyman, A. M., & Verrier, M. C. (2015). The effects of aquatic therapy on mobility of individuals with neurological diseases: a systematic review. Clinical rehabilitation, 29(8), 741-751.			No	

Additional literature

№.	Title
1.	Marinho-Buzelli, A. R., Bonnyman, A. M., & Verrier, M. C. (2015). The effects of aquatic therapy on mobility of individuals with neurological diseases: a systematic review. Clinical rehabilitation, 29(8), 741-751.
2.	GRESSWELL, A. (2015). THE HALLIWICK CONCEPT. Palaestra, 29(1).
3.	Nissim, M., Hutzler, Y., & Goldstein, A. (2019). A walk on water: comparing the influence of Ai Chi and Tai Chi on fall risk and verbal working memory in ageing people with intellectual disabilities–a randomised controlled trial. Journal of intellectual disability research, 63(6), 603-613.
4.	Zhu, Z., Cui, L., Yin, M., Yu, Y., Zhou, X., Wang, H., & Yan, H. (2016). Hydrotherapy vs. conventional land-based exercise for improving walking and balance after stroke: a randomized controlled trial. Clinical rehabilitation, 30(6), 587-593.
5.	Chan, K., Phadke, C. P., Stremler, D., Suter, L., Pauley, T., Ismail, F., & Boulias, C. (2017). The effect of water-based exercises on balance in persons post-stroke: a randomized controlled trial. Topics in sTroke rehabiliTaTion, 24(4), 228-235.

№.	Title
6.	Alcalde, G. E., Fonseca, A. C., Bôscoa, T. F., Gonçalves, M. R., Bernardo, G. C., Pianna, B., ... & Arca, E. A. (2017). Effect of aquatic physical therapy on pain perception, functional capacity and quality of life in older people with knee osteoarthritis: study protocol for a randomized controlled trial. Trials, 18(1), 1-6.
7.	Nayak, P., Mahmood, A., Natarajan, M., Hombali, A., Prashanth, C. G., & Solomon, J. M. (2020). Effect of aquatic therapy on balance and gait in stroke survivors: A systematic review and meta-analysis. Complementary therapies in clinical practice, 39, 101110.
8.	Schaefer, S. Y., Louder, T. J., Foster, S., & Bressel, E. (2016). Effect of water immersion on dual-task performance: implications for aquatic therapy. Physiotherapy Research International, 21(3), 147-154.
9.	Giuriati, S., Servadio, A., Temperoni, G., Curcio, A., Valente, D., & Galeoto, G. (2021). The effect of aquatic physical therapy in patients with stroke: A systematic review and meta-analysis. Topics in stroke rehabilitation, 28(1), 19-32.
10.	Homayouni, K., Naseri, M., Zaravar, F., Zaravar, L., & Karimian, H. (2015). Comparison of the effect of aquatic physical therapy and conventional physical therapy in patients with lumbar spinal stenosis (a randomized controlled trial). Journal of Musculoskeletal Research, 18(01), 1550002.
11.	Amedoro, A., Berardi, A., Conte, A., Pelosin, E., Valente, D., Maggi, G., ... & Galeoto, G. (2020). The effect of aquatic physical therapy on patients with multiple sclerosis: A systematic review and meta-analysis. Multiple sclerosis and related disorders, 41, 102022.
12.	Iliescu, A. M., McIntyre, A., Wiener, J., Iruthayarajah, J., Lee, A., Caughlin, S., & Teasell, R. (2020). Evaluating the effectiveness of aquatic therapy on mobility, balance, and level of functional independence in stroke rehabilitation: a systematic review and meta-analysis. Clinical rehabilitation, 34(1), 56-68.
13.	Chae, C. S., Jun, J. H., Im, S., Jang, Y., & Park, G. Y. (2020). Effectiveness of hydrotherapy on balance and paretic knee strength in patients with stroke: A systematic review and meta-analysis of randomized controlled trials. American journal of physical medicine & rehabilitation, 99(5), 409-419.
14.	Schitter, A. M., Fleckenstein, J., Frei, P., Taeymans, J., Kurpiers, N., & Radlinger, L. (2020). Applications, indications, and effects of passive hydrotherapy WATSU (WaterShiatsu)—A systematic review and meta-analysis. PloS one, 15(3), e0229705.
15.	Schitter, A. M., Nedeljkovic, M., Baur, H., Fleckenstein, J., & Raio, L. (2015). Effects of passive hydrotherapy WATSU (WaterShiatsu) in the third trimester of pregnancy: results of a controlled pilot study. Evidence-Based Complementary and Alternative Medicine, 2015.
16.	Ku, P. H., Chen, S. F., Yang, Y. R., Lai, T. C., & Wang, R. Y. (2020). The effects of Ai Chi for balance in individuals with chronic stroke: a randomized controlled trial. Scientific reports, 10(1), 1-9.
17.	So, B. C., Ng, J. K. F., & Au, K. C. (2019). A 4-week community aquatic physiotherapy program with Ai Chi or Bad Ragaz Ring Method improves disability and trunk muscle endurance in adults with chronic low back pain: A pilot study. Journal of back and musculoskeletal rehabilitation, 32(5), 755-767.
18.	Pérez-de la Cruz, S. (2019). Mental health in Parkinson's disease after receiving aquatic therapy: A clinical trial. Acta Neurologica Belgica, 119(2), 193-200.
19.	Timothy, A. (2020). Hydrotherapy aquatic physiotherapy and the application of bad ragaz ring method. Journal of Advanced Health Care, 2(II).
20.	Sato, D., Yamashiro, K., Yamazaki, Y., Ikarashi, K., Onishi, H., Baba, Y., & Maruyama, A. (2020). Priming Effects of Water Immersion on Paired Associative Stimulation-Induced Neural Plasticity in the Primary Motor Cortex. International journal of environmental research and public health, 17(1), 215.

Coordinating lecturer

Position	Degree, surname, name	Schedule №.
Associate Professor		43

Subdivision

Entitlement	Code
Department of Health Promotion and Rehabilitation	2006

Study module teaching form №. 1

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	D	6	4	20	100	130	5

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
1.	1	0	0	12.	0	0	1
2.	1	0	0	13.	0	0	1
3.	1	0	0	14.	0	0	1
4.	1	0	0	15.	0	0	1
5.	1	0	0	16.	0	0	1
6.	1	0	0	17.	0	0	1
7.	0	0	1	18.	0	0	1
8.	0	0	2	19.	0	0	1
9.	0	0	2	20.	0	0	4
10.	0	0	1	21.	0	4	0
11.	0	0	2				
				Total:	6	4	20

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
Case analysis (study)	21	10	10		*	0														
Accounting for practice sessions	7-13	10	10				*	0												
Scientific paper (text) analysis	1-6	10	10							*	0									
Accounting for practice sessions	14-20	10	10									*	0							
Reflection on action	7-20	14	10															*	0	
Exam	1-21	50	50															*	0	
Total:	-	104	100																	

Study module teaching form №. 2

Semester		Mode of studies	Structure				Total hours	Credits
			Theory	Seminars	Lab Works	Ind. work		
A	S	D	6	4	20	100	130	5

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
1.	1	0	0	11.	0	0	1
2.	1	0	0	12.	0	0	1
3.	1	0	0	13.	0	0	1
4.	1	0	0	14.	0	0	1
5.	1	0	0	15.	0	0	1
6.	1	0	0	16.	0	0	1
7.	0	0	1	17.	0	0	1
8.	0	0	1	18.	0	0	1

№. of Themes	Academic hours			№. of Themes	Academic hours		
	Theory	Seminars	Lab Works		Theory	Seminars	Lab Works
9.	0	0	1	19.	0	0	1
10.	0	0	1	20.	0	1	6
				Total:	6	1	19

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
Case analysis (study)	1-6	10	10						*	0										
Scientific paper (text) analysis	12-20	10	10							*	*	*	*	*	0					
Individual Homework	7-12	10	10										*	0						
Accounting for practice sessions	7-19	10	10										*	0						
Exam	1-20	50	50															*	0	
Reflection on action	7-20	14	10															*	0	
Total:	-	104	100																	