COURSE UNIT DESCRIPTION - NEUROBIOLOGY

Course unit title	Code
NEUROBIOLOGY	

Lecturer(s)	Department(s) where the course unit (module) is delivered
Coordinator: Prof. dr. Osvaldas RUKŠĖNAS **Other(s):** Prof. Aidas Alaburda, Assoc. Prof. Gytis Svirskis, dr. Vilma Kisnierienė, dr. Kastytis Dapšys, dr. Ramunė Grikšienė,Assoc. Prof. Alvydas Šoliūnas, Assoc. Prof. Alius Pleskačiauskas, Laura Mačiukaitė	Vilnius University, Department of Neurobiology and Biophysics, M.K.Čiurlionio g. 21/27, LT-03101 Vilnius

Cycle	Level of the course unit	Type of the course unit
Full-time studies (1st stage)	1 out of 1	Elective

Mode of delivery	Period of delivered	Language(s) of instruction
Face to face	6th semester, spring	Lithuanian

Prerequisites and corequisities	
Prerequisites: None	**Corequisities (if any):** None

Number of credits allocated to the course unit	Student's total workload	Contact hours	Self-study and research hours
5	**133**	**48**	**85**

Purpose of the course unit (module): programme competences to be developed

Upon the successful completion of this course, students will acquire:
Subject-specific competences:

- knowledge of the basic structure and functioning principles of the nervous system at various levels of organization.,
- knowledge of basic structure and functioning principles of the nervous system at various levels of organization;
- understanding of the neurobiological basis of brain diseases;
- skills to to evaluate advantages and shortcomings of brain investigation methods.

General competences:

- skills for self-development, skills to study general science resourses;

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
• describes the structure of nervous system in vertebrates • describes how the information is processed in brain • describes the neurobiological basis of brain diseases • critically evaluates the brain imaging methods	Lectures, laboratory work, self reading.	Colloquiums/exam

Content: breakdown of the topics	Contact hours	Self-study work: time and assignments

	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/work placement	**Contact hours**	**Self-study hours**	**Assignments**
1. Introduction	2						**2**		
2. Organisation of nervous system, CNS	6				2		**8**	**8**	Self reading
3. Neurobiology of addiction	2						**2**	**4**	Self reading
4. Neurons, synapses, potentials	2				2		**4**	**4**	Self reading
5.Methods of investigation, model systems	2				4		**6**	**8**	Self reading
6. Neurotransduction	2						**2**	**4**	Self reading
7. Motor system	2						**2**	**4**	Self reading
8. Memory and learning	2						**2**	**7**	Self reading
9. Emotions and motivation	2				2		**4**	**4**	Self reading
10. Neuroendocrinic system	2						**2**	**4**	Self reading
11. Sleep	2						**2**	**4**	Self reading
12. Brain imaging and CNS diseases	2				4		**6**	**6**	Self reading
13 Psychoneuroimunology	2						**2**	**6**	Self reading
14. “Neurobiology” of plants	2				2		**4**	**4**	Self reading
15. Colloquiums								**18**	Preparation for colloquiums
Total	**32**				**16**		**48**	**85**	

Assessment strategy	**Weight,%**	**Assessment period**	**Assessment criteria**
3 colloquiums and/or exam – computer based tests.	100	During semester	Each colloquium consists of 25 questions. Evaluation is proportional: correct answer to 1 question gives a 0.4 point to the colloquium mark. The final mark is average of 3 colloquium marks. If the average of colloquiums grades is less than five or student wants, student can take an exam. Exam consists of 25 questions. Evaluation is proportional: correct answer to 1 question gives a 0.4 point to the exam mark. In this case the final grade is exam grade.

Author	**Year of publica-tion**	**Title**	**Issue of a periodical or volume of a publication**	**Publishing place and house or web link**
Compulsary reading				
M.F. Bear, B.W. Connors, M.A. Paradiso	2007	“Neuroscience. Exploring the brain”		Lippincott Williams & Wilkins
L.R. Squire, D. Berg, F.E.	2008	“Fundamental		Academic Press

Bloom, S.du Lac, A. Ghosh, N.C. Spitzer		Neuroscience”		
Kandel E.R., Schwartz J.H., Jessell T.M.	2000	**“**Principles of Neural Science”		McGraw-Hill Publishing
M.S. Gazzaniga	2004	“The Cognitive Neurosciences”		A Bradford Book
Optional reading				
		Original scientific papers		
O. Rukšėnas, R. Grikšienė	2007	“Sensorinių sistemų biofizika”		VU leidykla
G. Svirskis	2007	“Neurotransdukcija”		VU leidykla
K. Dapšys	2007	“Smegenotyros metodai”		VU leidykla