**COURSE UNIT (MODULE) DESCRIPTION**

| Course unit (module) title | Code |
|---|---|
| **Neuroethology** | **621C14001** |

| Lecturer(s) | Department(s) where the course unit (module) is delivered |
|---|---|
| **Coordinator:** Dr. Vaida Survilienė<br><br>**Other(s):** Dr. Alvydas Šoliūnas; Dr. Mindaugas Mitkus; Dr. Gintaras Malmiga, Dokt. Martynas Arbačiauskas | Institute of Biosciences, Life Science Center, Saulėtekio al. 7, LT-10223, Vilnius |

| Study cycle | Type of the course unit (module) |
|---|---|
| Full-time studies (2nd stage) | Compulsory |

| Mode of delivery | Period when the course unit (module) is delivered | Language(s) of instruction |
|---|---|---|
| Lectures, seminars, exercises | Second (spring) semester | English |

| Requirements for students | |
|---|---|
| **Prerequisites:** | **Additional requirements (if any):** |

| Course (module) volume in credits | Total student's workload | Contact hours | Self-study hours |
|---|---|---|---|
| 5 | 130 | 64 | 66 |

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

The course unit aims to develop:

*Specific competences:*

- ability to understand foundations of animal behavior: instinctive behavior, classical and instrumental conditioning, intellectual behavior.
- ability to apply scientific approaches when investigating, analyzing, and explaining behavior of animals.

*Generic competences:*

- analytical and critical thinking;
- skills for self-development, learning skills in order to study general science resources;

| Learning outcomes of the course unit (module) | Teaching and learning methods | Assessment methods |
|---|---|---|
| • ability to distinguish different forms of animal behaviour;<br>• ability to estimate specific cognitive abilities of animals: time and number representation, navigation, communication forms, social behaviour forms;<br>• ability to distinguish forms of behaviour that are common for animals and humans;<br>• ability to critically evaluate literature on animal behaviour;<br>• skills to use specific methods for experimental investigation of specific forms of animal behaviour. | Lectures, seminars, video demonstrations, literature analysis, exercises | Colloquiums and examination |
| • ability to design and perform the experiments with animals: a) ability to raise the research goals based on analysis of scientific literature; b) ability to use the appropriate methods of | Exercises (performance of experiment in a group, search and analysis of information), presentations (preparation and | Two presentations (methods and design of experiment, and results of experiment) |

| | | |
|---|---|---|
| experiment and behaviour analysis ant to choose the appropriate research objects; c) ability to properly perform the experiment ant to deal with emerging problems; d) ability to analyse and summarize the data and to draw conclusions;<br>• acquisition of practical skills to work in groups: a) ability to design collectively an experiment, to coordinate the work in the groups, to organize the discussion, to deal with emerging problems, to present the collectively obtained results; b) ability to evaluate critically and adequately the contribution of each member of the group | delivery of a presentation), discussions | |

| **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. Classical and instrumental conditioning: methods, theories, and mechanisms (*A. Šoliūnas, V. Survilienė*) | 6 | | | | | | **6** | **9** | Textbooks and scientific literature reading. |
| 2. Discrimination learning and categorisation: methods and theories; perception of time and numbers (*A. Šoliūnas*) | 2 | | 2 | | | | **4** | **3** | Textbooks and scientific literature reading. |
| 3. Short-term and long-term memory: methods, theories, and mechanisms (*V. Survilienė*) | 2 | | | | | | **2** | **3** | Textbooks and scientific literature reading. |
| 4. Specific abilities: short-distance and long-distance navigation; behavioral synchronization (*V. Survilienė; G. Malmiga*) | 4 | | 4 | | | | **8** | **6** | Textbooks and scientific literature reading. |
| 5. Scientific project: observation of animal behaviour, study of learning *(V. Survilienė, M. Arbačiauskas)* | 2 | | 4 | | 20 | | **26** | **33** | Literature reading, preparation of presentations, practical works. |
| 6. Ethology and behaviourism. Trends in the study of animal behaviour, the problems and methods *(V. Survilienė)* | 2 | | | | 4 | | **6** | **3** | Textbooks and scientific literature reading. |
| 7. Social behaviour, socialisation and communication, language: attributes, experiments, theories *(V. Survilienė)* | š | | | | | | **6** | **6** | Textbooks and scientific literature reading. |
| 8. Intellectual behaviour, the evolution of intelligence (*A. Šoliūnas, M. Mitkus*) | 6 | | | | | | **6** | **3** | Textbooks and scientific literature reading. |
| **Total** | **30*** | | **10**** | | **24***** | | **64** | **66** | |

* (Lectures) - V. Survilienė – 14 h; A.Šoliūnas – 12 h; M. Mitkus – 2 h; G. Malmiga – 2 h;
** (Seminars) - A. Šoliūnas – 2 h; V. Survilienė – 4 h; M. Arbačiauskas – 4 h.
*** (Internship) - V. Survilienė – 4 h.; M. Arbačiauskas – 20 h.

| Assessment strategy | Weight% | Deadline | Assessment criteria |
|---|---|---|---|
| 1st Colloquium (open or closed questions of several degree of difficulty). | 23 % | Before the 2nd colloquium | Maximum grade is 2.3 points. Grade is proportional to the cumulative percentage of points for all questions, i.e. the 2.3 points correspond to 100 % of points of all questions. |
| 2nd Colloquium (open or closed questions of several degree of difficulty). | 23 % | Before the 3rd colloquium | Evaluation is the same as in the 1st colloquium. |
| 3rd Colloquium (open or closed questions of several degree of difficulty). | 23 % | Before the end of semester | Evaluation is the same as in the 1st colloquium. |
| Reserved colloquium – retake of the 1st, 2nd, or 3rd colloquium. | | Before the end of semester | Evaluation is the same as in the 1st colloquium.<br>The grade of reserved colloquium is accepted and the previous grade is cancelled. |
| Scientific project | 31 % | Before the end of semester | 31 % (3.1 point) consists of:<br>1) 2 % for fulfilment of practical tasks given by lecturer (2 % - tasks accomplished, 0 % - not accomplished);<br>2) 29 % for accomplishment of scientific project: 10 % for presentation of literature analysis and methods of experiment (1st presentation, should be presented before the 1st colloquium); 19 % for presentation of data analysis, results, and conclusions of experiment, and for the discussion about experiment (2nd presentation, should be presented on the last sessions of practice).<br>The grade of scientific project consists of:<br>• The evaluation from the lecturer (filling in the form according to the criteria, where 0 points correspond to work not done and 10 points correspond to work done perfectly);<br>• The evaluation from other students (filling in the same form);<br>• The contribution (0-100%) of the student in the work of a group (the grade is estimated by the members of a group) |
| Verbal and written examination. | 69 % | During the session | Exam is compulsory only for the students that collected less than 3.45 points in colloquiums (i.e. less than 50 % of maximum points). Other students may take the exam to improve the grade of colloquiums. In this case, only the grade of exam is admitted.<br><br>69 % (6.9 points) sum consists of answers to three thematic questions (23 % each). Written answers at the request of the lecturer and with the student's consent may be supplemented by oral answers. |

| Author | Year of publication | Title | Issue of a periodical or volume of a publication | Publishing place and house or web link |
|---|---|---|---|---|
| **Compulsary reading** | | | | |
| J. M. Pearce. | 2008 | Animal learning and cognition, 3rd ed. | | Psychology Press |
| **Optional reading** | | | | |
| M. Domjen | 2015 | The Principles of Learning and Behavior, 7th ed. | | Cengage Learning |
| M.F. Bear, B.W. Connors & M.A. Paradiso | 2016 | Neuroscience. Exploring the Brain, 4th ed. | | Wolters Kluwer |
| R. Martin & P. Bateson | 1993 | Measuring Behaviour: An Introductory Guide. | | Cambridge University Press |
| J.J. Bolhuis (ed.) | 2000 | Brain, perception, memory | | Oxford University Press |