Course unit (module) title	Code
Science Forum II	

Lecturer(s)	Department(s) where the course unit (module) is delivered
Coordinators: Audronė Jakaitienė, PhD **Tutors:** Eugenijus Gefenas, PhD, Vilma Lukaševičienė, Margarita Poškutė, PhD, prof. V. Vengelienė, PhD, E. Preikšaitienė, MD PhD, prof. S. Gražulis, PhD	Joined forces from different research units

Study cycle	Type of the course unit (module)
Second cycle	Compulsory

Mode of delivery	Period when the course unit (module) is delivered	Language(s) of instruction
Face-to-face, self-study Lectures, seminars and practice	3rd 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	134	50	84

Purpose of the course unit (module): programme competences to be developed
The aim of the course is to develop the ability to critically evaluating the latest research achievements, to discuss the latest scientific issues and problems in systems biology, *to be informed in advances in systems biology science.*

Learning outcomes of the course unit (module)	Teaching and learning methods	Assessment methods
1.1., 3.1. Be prepared to discuss advanced topics in cell structure and behavioural patterns at the molecular level, the functions of human organs and systems, the mechanisms of physiological regulation and applications of genomics, proteomics, transcriptomics and epigenomics. 2.1. Be able to develop innovating concepts and projects for fundamental or applied research in order to solve arising system biology issues. 2.1. Be able to gather and analyse information on subjects related to system biology with a critical approach, and to carry out a technological watch. 4.1. Perform duties within the deadlines and goals of a project 4.1. Perform practical and theoretical work in system biology in accordance with the bioethics requirements. 4.2. Have summarising skills enabling them to communicate in a clear manner with specialists from other fields or the public about professional project, on work results, or about the results of tasks.	Lectures, debates, group discussion, practical assignments, e-conferences with nominated lectures	Completion of practical assignments; Written examination.

5.1 Be able to work autonomously and as a part of a multidisciplinary team; act honestly and according to ethical obligations		
5.2. Be able to critically analyse their own research quantitative results and know possible ways for improvement		

Content: the possible topics	Contact hours							Self-study work: time and assignments	
	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/work	Contact hours	Self-study hours	Assignments
1. Bioethics issues in System biology Tutors: E. Gefenas, V. Lukaševičienė, M. Poškutė	**6**		**20**				**26**	**32**	
2.1. Basic historical features and principles of bioethics. Familiarisation with relevant national and international guidelines and regulations. Analysis, comparison and critical evaluation of different guidelines, principles and methods in bioethics.	2		6				**8**	**10**	Self-study of required (recommended) reading materials, relevant legal acts to be ready to discuss study questions related to different topics of bioethics. To present bioethics cases to the group and summarise discussions that follows these presentations.
2.2. Familiarization with the most important ethical issues arising in the field of pre-clinical research that involves human biological materials and animals. Understanding of relevant ethical issues related to research involving human participants. Analysis and critical evaluation of ethics issues related to the mentioned topics.	2		6				**8**	**10**	
2.3. Recent developments and ethical challenges related to genome editing in the fields such as human health and reproduction, industry, production of food, release of genetically altered species into the wild, and other relevant applications. Analysis, comparison and critical evaluation of ethics issues related to the mentioned topics.	2		8				**10**	**12**	
2. Behavioral pharmacology of addiction Tutors: prof. dr. V. Vengelienė	4		4				**8**	**13**	Self-study of Tutorials material provided by the lecturer. Reading material in web pages provided by a professor and prepare for the class discussion.
3. Omics integration at patient level Tutors: E. Preikšaitienė, E. Siavrienė, G. Petraitytė			4				**4**	**6**	Analysis of omics data provided by the tutor
4. Reproducible computational research Tutors: S. Gražulis	2			4			**6**	**9**	Preparation of Git and GitLab/GitHub

									accounts for the sharing of Master Thesis scripts and codes. Documenting and Tracking your code.
5. Journal club Moderator: A. Jakaitienė			6				**6**	**20**	Selection of the paper with recent advances from Systems biology field. Presentation and discussion.
Total	**12**		**34**	**4**			**50**	**80**	

Assessment strategy	Weight, %	Deadline	Assessment criteria
Bioethics issues in Systems biology			
Evaluation of theoretical knowledge and practical skills in analysing bioethical issues	50%	Next week after answering questions in writing	Accumulative score: • Work during seminars (30%)) • Case presentations and summaries (30%) • Answers to the questions in writing (40%)
Activity 3 - 4			
Active participation in the classes	10% each	During lectures and seminars	Students perform and submit all exercises/tasks in each topic. The performance of practical work is assessed on a scale of 1-10 in each topic.
Journal club activity			
Presentation and discussion literature review of Master thesis	20%	On the day according to the schedule	Students should present and discuss literature review part of Master thesis. The aim of presentation of a literature review is to demonstrate that you have an in-depth grasp of your subject; and that you understand where your own research fits into and adds to an existing body of agreed knowledge. Literature review should: • demonstrate a familiarity with a body of knowledge and establishes the credibility of your work; • summarise prior research and says how your Thesis is linked to it; • integrates and summarises what is known about a subject; • demonstrates that you have learnt from others and that your research is a starting point for new ideas. Evaluation criteria for the presentation is the same as evaluation criteria for oral presentation of Master thesis: https://www.mf.vu.lt/images/English_version/MF_SB_Master_Thesis_Methodological_Guidelines_publish.pdf Maximum time for the presentation is 12min.
Final grade	100	At the end of the course	Final grade of the course is weighted average of all activities.

Author	Year of publication	Title	Issue of a periodical	Publishing place and house or web link

			or volume of a publication	
Compulsary reading				
Scott Chacon and Ben Straub	2020	Pro Git		https://git-scm.com/book/en/v2/Getting-Started-About-Version-Control
Other reading				
		What is a literature review?		https://www.rlf.org.uk/resources/what-is-a-literature-review/
		How to write a literature review		https://library.concordia.ca/help/writing/literature-review.php

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