

**Doctoral program BIOMEDICINE,
Core Course: GENETICS**

Course Schedule for the Academic Year 2024/2025

Coordinator: Prof. Dr. Simon HORVAT (simon.horvat@bf.uni-lj.si)

Deputy Coordinator: Prof. Dr. Uroš Petrovič (uros.petrovic@bf.uni-lj.si)

Instructors: Simon Horvat, Jernej Jakše, Borut Peterlin, Jerneja Ambrožič Avguštin, Uroš Petrovič, Peter Dovč, Jernej Ogorevc, Tanja Kunej, Ino Čurik, Peter Trontelj, Cene Gostinčar, Duško Lainšček, Blaž Stres, Roman Jerala, Tomaž Curk, Janez Demšar

Module 1: Genetic Concepts I (10 ECTS)

Date	Day	Time	Instructor	Content	Location ¹
04.11.2024	Monday	14:00-18:00	Simon Horvat	Mendelian genetics, linkage inheritance; positional cloning, QTL, GWAS	Ž4
06.11.2024	Wednesday	14:00-18:00	Jernej Jakše	Mobile genetic elements in eukaryotes, gene and chromosomal mutations, plant genetics	A7
11.11.2024	Monday	14:00-18:00	Luca Lovrečič, Aleš Maver	Human Genetics 1: Genomic prenatal diagnostics, monogenic disease diagnostics with NGS	Ž4
13.11.2024	Wednesday	14:00-18:00	Anja Kovanda, Borut Peterlin	Human Genetics 2: Optical genomic mapping, public health genomics, pathway to personalized medicine	UKC*
19.11.2024	Tuesday	14:00-18:00	Jerneja Ambrožič A.	Bacterial genetics	UKC*
20.11.2024	Wednesday	14:00-18:00	Uroš Petrovič	Microbial eukaryotic genetics, genetic interactions, comparative genomics	A10
25.11.2024	Monday	14:00-18:00	Peter Dovč, Jernej Ogorevc	Gene expression regulation in metazoans	A10
27.11.2024	Wednesday	14:00-18:00	Tanja Kunej	Cytogenetics & Epigenetics	SS BF
02.12.2024	Monday	14:00-18:00	Ino Čurik	Quantitative Genetics	A10
04.12.2024	Wednesday	14:00-18:00	Peter Trontelj	Population and Evolutionary Genetics	SS BF
09.12.2024	Monday	14:00-18:00	Cene Gostinčar	Genome Sequencing and Annotation	A7
11.12.2024	Wednesday	14:00-18:00	Duško Lainšček, Simon Horvat	Genome Editing, Gene Therapy, Bioethical Aspects of Genetic research	B1**

1 – University of Ljubljana, Biotechnical Faculty, Jamnikarjeva 101, 1000 Ljubljana, except for locations marked with * or **

*UKC – University Medical Centre Ljubljana, Gynecology Clinic, Clinical Institute of Genomic Medicine, Šljajmerjeva Street 4, 1000 Ljubljana

** University of Ljubljana, Biotechnical Faculty, Department of Biology, Večna pot 111, 1000 Ljubljana

Module 2: Genetic Concepts II (10 ECTS)

Coordinator: Prof. Dr. Simon HORVAT (simon.horvat@bf.uni-lj.si)

Deputy Coordinator: Prof. Dr. Uroš Petrovič (uros.petrovic@bf.uni-lj.si)

Conducted from 03.02. to 14.03.2025, with fewer shared lectures. Content and instructors adapt to the specific needs of enrolled students or their doctoral dissertation topics, providing a customized module for individual students.

Module 3: Bioinformatics Tools (10 ECTS)

Coordinator for Module 3: Prof. Dr. Jernej JAKŠE (jernej.jakse@bf.uni-lj.si)

Date	Day	Time	Instructor	Content	Location
25.03.2025	Tuesday	15:00-18:00	Jernej Jakše	Basics of Bioinformatics / NGS Data Processing	TBD*
27.03.2025	Thursday	15:00-18:00	Cene Gostinčar	RNA sequencing and its applications	TBD
01.04.2025	Tuesday	15:00-18:00	Blaž Stres	Bioinformatics in Metagenomics	TBD
03.04.2025	Thursday	15:00-18:00	Uroš Petrovič	Tools for model organisms and interactome data, integrative genomics	TBD
08.04.2025	Tuesday	15:00-18:00	Roman Jerala	Bioinformatics tools for protein analysis	TBD
10.04.2025	Thursday	15:00-18:00	Tanja Kunej	Bioinformatics tools in genomics	TBD
16.04.2025	Wednesday	15:00-18:00	Tomaž Curk	Detection of protein and RNA interactions	TBD
TBD	TBD	4 days in May 2025	Tomaž Curk, Janez Demšar	Python and Bash Programming Workshop	TBD
28.05.2025	Wednesday	15:00-18:00	Jernej Jakše	Final Exam	TBD

*To be determined later