UP FAMNIT
STUDY PROGRAMME: BIOINFORMATICS (1st bologna cycle), in English
COMPULSORY AND ELECTIVE COURSE IN THE ACADEMIC YEAR 2024/205

1st YEAR (10 compulsory courses)

NUMB.	COURSE	YEAR	SEMESTER	LANGUAGE
1	Algebra I – Matrix Calculus	1st	Autumn	English
2	Analysis I - Foundations of Analysis	1st	Autumn	English
3	Programming I	1st	Autumn	English
4	Computer Practicum	1st	Autumn	English
5	Theoretical Computer Science I	1st	Autumn	English
6	Data Programming	1st	Spring	English
7	Organic Chemistry and Biochemistry	1st	Spring	English
8	Analysis II – Infinitesimal Calculus	1st	Spring	English
9	Genetics	1st	Spring	English
10	Algebra II – Linear Algebra	1st	Spring	English

2nd YEAR (11 compulsory courses)

NUMB.	COURSE	YEAR	SEMESTER	LANGUAGE
1	Data Structures and Algorithms	2nd	Autumn	English
2	Introduction to Database Systems	2nd	Autumn	English
3	Analysis III – Functions of Many Variables	2nd	Autumn	English
4	Foundations of Physics with Biophysics	2nd	Autumn	English
5	Introduction to Machine Learning and Data Mining	2nd	Autumn	English
6	Introduction to Bioinformatics	2nd	Spring	English
7	Statistics	2nd	Spring	English
8	Programming II – Concepts of Programming Languages	2nd	Spring	English
9	Algorithms in Bioinformatics	2nd	Spring	English
10	Nucleotide Sequence Analysis	2nd	Spring - 4th quarter	English
11	Physical Chemistry with Chemoinformatics	3rd	Spring - 4th quarter	English

3rd YEAR (7 compulsory, 4 elective courses and Seminar - Final project paper)

NUMB.	COURSE	YEAR	SEMESTER	LANGUAGE
1	Structures of Biological Molecules	3rd	Autumn - 1rd quarter	English
2	Biotechnology	3rd	Autumn - 2nd quarter	English
3	Evolutionary and Population Genetics	3rd	Autumn	English
4	Evolutionary Biology	3rd	Autumn	English
5	Functional Genomics	3rd	Spring - 3rd quarter	English
6	Physical Chemistry with Chemoinformatics	3rd	Spring - 4th quarter	English
7	Systems III –Information Systems	3rd	Spring	English
8	Mathematical Modelling in Bioinformatics	3rd	Spring	English
9	Seminar - Final Project Paper	3rd	Spring	English
10	*Internal elective course*	3rd		
11	*External elective course*	3rd		
12	*External elective course*	3rd		

ELECTIVE COURSES

NUMB.	COURSE	ECTS CREDITS	AVAILABLE FOR THE YEAR OF STUDY	INTERNAL/ EXTERNAL ELECTIVE	COURSE LEADER	LANGUAGE	SEMESTER
1	Introduction to numerical calculations	6	3rd	internal or external	Vito Vitrih	English	Autumn
2	Multimedia design	6	3rd	external	Matjaž Kljun	English	Autumn
3	Biological Topics in English	6	3rd	internal or external	Sara Zupan	English	Spring
4	Systems biology approach in human disease study	6	3rd	internal or external	Anže Županič, Katja Lakota	English	Spring
5	Biomolecular Modeling	6	3rd	internal or external	Jure Pražnikar	English	Spring
6	Practical Training	6	3rd	internal or external	Matjaž Hladnik		

SUBSEQUENT CHANGES OF OFFERED COURSES:
Possible subsequent changes of the offered courses will be published on Faculty website. Please follow the published information on the Faculty website.