

University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies

BIOINFORMATICS - undergraduate study programme, 1st Bologna cycle

Course structure for students enrolled in the academic years 2017/18 - 2018/2019

During their studies, students must complete a total of 30 courses (26 compulsory and 4 electives) and prepare a final project.

All courses are awarded 3 or 6 ECTS-credits. One ECTS-credit encompasses 30 hours of student work. In addition to the student's presence (at lectures, seminars, in-class and laboratory practical work), this also includes independent work (literature study, preparation for examinations, home assignments, seminar and project work, etc.). The courses require a minimum of 75 and a maximum of 90 hours of a student's presence (contact hours).

The student may select 2 out of 4 elective courses from study programmes provided by other institutions of higher education in Slovenia and internationally. The courses selected may fall within the fields of Mathematics, Financial Mathematics, Computer Science, Biology, Chemistry, Physics, and Agriculture.

1ST YEAR (60 ECTS-credits)

Courses	ECTS
Analysis I - Foundations of Analysis	6
Analysis II - Infinitesimal Calculus	6
Algebra I - Matrix Calculus	6
Programming I	6
Programming II - Concepts of Programming Languages	6
Computer Practicum	6
General and Inorganic Chemistry	6
Introduction to Genetics and Genomics	6
General Botany	6
General Zoology	6

2ND YEAR (60 ECTS-credits)

Courses	ECTS
Statistics	6
Data Structures and Algorithms	6
Introduction to Database Systems	6
Organic Chemistry and Biochemistry	6
Data Programming	6
Theoretical Computer Science I	6
Algorithms in Bioinformatics	6
Systems II - Operating Systems	6
Foundations of Physics with Biophysics	6

<i>Elective Course</i>	6
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3RD YEAR (60 ECTS-credits)

Courses	ECTS
Structures of Biological Molecules	3
Evolutionary Genetics	6
Systems III - Information Systems	6
Basic Population Genetics	3
Mathematical Modelling	6
Bioinformatics Practice	6
Physical Chemistry with Cheminformatics	6
<i>Elective Courses</i>	18
Seminar - Final Project Paper	6

ELECTIVE COURSES

In their third year of studies, students can select a traineeship in a working environment as their elective course. The aim is to enable students to gain professional and practical experience in the field of bioinformatics. Traineeships last three weeks and students are awarded with six (6) ECTS credits. Traineeship is supervised by a qualified mentor in the field of bioinformatics.

(The list shows only elective courses offered in the last two academic years.)

Courses	ECTS
Introduction to Numerical Calculations (<i>study programme Mathematics</i>)	6
Ecotoxicology (<i>study programme Biodiversity</i>)	6
Evolution Biology (<i>study programme Biodiversity</i>)	6