

The MSc in Bioinformatics & Computational Biology – University of Bern

Information taken from:

http://www.biology.unibe.ch/content/bioinformatics/msc_bioinformatics/curriculum/index_eng.html

Specifically designed courses bring you up to speed in Bioinformatics and Computational Biology. You will acquire the tools of the trade focusing on solving current biological problems.

There is no bachelor course as a precursor to this master program. [Admission](#) is granted to applicants coming from various fields of study.

To benefit the most of the courses and practical parts, you would want to bring your own laptop computer equipped with at least 4 GB of RAM and WiFi.

The curriculum at a glance

The programme requires **60 ECTS credits from courses** normally taken over 2 semesters, followed by a 6 months MSc research project and a **written thesis (30 ECTS)**. Full time students can complete the programme in 3 semesters. Note that the program **starts in the fall semester**.

The first semester consists of courses specifically designed to complement your existing knowledge: an introduction to programming and Linux (7ECTS) for people with a background in biology or life sciences, and an introduction to the fundamentals of biology and lab work (7 ECTS) for those with a background in computer science, mathematics, statistics or a related field.

3 rd Sem	Thesis	30 ECTS
2 nd Sem	Compulsory Courses	30 ECTS
1 st Sem	Compulsory Courses	16 ECTS
	Elective Courses	7 ECTS
	Programming and Linux	7 ECTS
	Biology and Lab Work	7 ECTS
	Biologists	Non-Biologists

Full time students can complete the programme in [3 semesters](#).

Course Details

1st semester (30 ECTS)

	ECTS	CTS No.
Mandatory Courses		
Data production and management	3	104217
DNA/RNA sequence analysis	3	104219
Applied biostatistics I. With practicals.	4	104207
Modelling I. With practicals.	4	104218
Lecture Series and Journal Club	2	104220
Question and answer session to Bioinformatics and Computational Biology	0	104685
Elective Courses	7	
For Biologists		
Introduction to UNIX/Linux and scripting with Python and R	2	103913
Basic programming for non-informaticians. With practicals.	5	104189
For Non-Biologists		
Molecular biology and genetics for non-biologists	7	104206

2nd semester (30 ECTS)

	ECTS	CTS No.
Applied biostatistics II. With practicals.	4	104224
Cellular and genetic networks	3	11470
Eukaryotic gene expression	3	2218
Modelling II. With practicals.	4	104285
Machine learning in bioinformatics. With practicals.	4	104287
Evolutionary genomics	3	104225
Cancer genomics	3	104243
Mass spectrometry to systems biology	2	104283
Applied biological image processing	2	104288
Lecture and Journal Club series	2	104220

3rd semester (Master thesis, 30 ECTS)