

Master's Degree Programme in Bioinformatics

DEGREE REQUIREMENTS

Students who have obtained the right to study in the Master's Degree Programme in Bioinformatics in Autumn 2011 will follow these requirements. Requirements for Aalto University School of Science can be found in the study programme of Aalto.

MASTER OF SCIENCE DEGREE (120 CREDITS)

1. Major subject studies (minimum of 110 credits)

584329 or 57557 ADVANCED STUDIES IN BIOINFORMATICS (110 CREDITS)

Compulsory courses, 13 cr

582313 Elements of bioinformatics (4 cr)

582631 Introduction to Machine learning (4 cr), or

T-61.3050 Machine Learning: Basic principles (5 cr)

T-61.5050 High-throughput bioinformatics (5-7 cr)

Two of the following, in accordance with an approved personal study plan (FM-HOPS):

582670 Algorithms for bioinformatics (4 cr)

57046 Markovian modelling and Bayesian learning (5 cr)

57748 Genetic analysis and molecular evolution (4-6 cr)

Studies in laboratory techniques (2-6 cr)

Optional advanced courses in bioinformatics (other than seminars), minimum of 16 cr

Seminars, 6 cr

50151 or 57631 Master's thesis, 40 cr, containing

58307312 Master's thesis seminar, 3 cr

50041 Maturity test

Optional courses minimum of 20 credits of the following subjects, in accordance with an approved personal study plan (FM-HOPS)

- Computer science
- Mathematics and statistics
- Biology, medicine or other suitable subject

2. Other studies (minimum of 6 credits)

Personal study plan (FM-HOPS), 1 cr

Advanced internship or vocational orientation studies, 1–3 cr

993734 Academic Writing for Students in English-Medium Master's Degree Programmes 1, 2 cr

993735 Academic Writing for Students in English-Medium Master's Degree Programmes 2, 2 cr

Optional courses

An additional requirement is that Bachelor's and Master's degree together must contain

Studies in biology, medicine or other suitable subjects, minimum of 25 credits

Studies in mathematics, statistics and computer science, minimum of 60 credits

Degrees

The basic degree offered by the MBI programme is Master of Science (in HY: MSc, filosofian maisteri; in Aalto: MSc (Tech), diplomi-insinööri), with bioinformatics as the major subject.

The scope of the degree is 120 credits, and requires a suitable Bachelor's level degree as a prerequisite.

The MSc degree consists of a minimum of 110 credits of advanced interdisciplinary studies in bioinformatics. Both the MSc degree and the MSc (Tech) degree have been designed to be as similar as possible. The courses in biosciences are offered by the Faculties of Biological and Environmental Sciences, Medicine as well as Forestry and Agriculture at the University of Helsinki.

BIOINFORMATICS AS MINOR SUBJECT

The recommended way to study bioinformatics as minor subject is to collect bioinformatics courses together with suitable basic and intermediate level courses in computer science, mathematics, and statistics to the minor module in method sciences (see study guide).