



## Preliminary information

**Major subject:** Bioinformatics

**Extent:** 120 credits/ECTS credits

**Duration:** two academic years

**Programme period:** autumn semester 2012 - spring semester 2014

**Website:** <http://bioinformatics.fi>

This programme offers interdisciplinary knowledge of bioinformatics. Courses are jointly managed by the University of Tampere and University of Turku, and they take advantage of modern educational technology. Education is given in English, and the students of this international programme learn to work together with associates from different countries and scientific backgrounds. Students will be "bilingual" in terms of combined expertise on information technology and biosciences, and therefore, applicants can be as well from biological as from computational fields.

Applicable fields of prior studies are biosciences and information technology, or other relevant fields where sufficient knowledge of information technology and/or biosciences is achieved for studying in the Master's Degree Programme in Bioinformatics. The decisions of admission will be based on the relevance of the awarded degrees, the amount and relevance of courses taken, the grades received in the Bachelor's degree, and applicant's preference for home university (see below). Complementing studies may be required depending on the extent of student's relevant previous studies.

If you also apply to the University of Turku, you have to fill in a separate application form and collect separate enclosures. You must also indicate your primary choice.

Every year 15 students are admitted to the programme in each university (total of 30 students). The Master's programme lasts for two years and leads to the Master of Science degree in bioinformatics.

## Admission criteria

- For details see: <http://bioinformatics.fi>

**Application round opens 1 December 2011.**  
**Application deadline: 31 January 2012**

**For more information , please contact:**  
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Applications are to be submitted through the centralised University Admissions Finland (UAF) service. Instructions for applicants are available at: [www.uta.fi/admissions/degreeprog/applying.php](http://www.uta.fi/admissions/degreeprog/applying.php).





## Curriculum

Workload per one academic year is 1600 hours which corresponds to 60 ECTS credits.

IBT

Institute of Biomedical Technology

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### Master's Degree Programme in Bioinformatics

#### General studies 3–6 ects

BIOI0001 Orientation Course 3 ects

KKSU53 FINNISH AS A FOREIGN LANGUAGE: ELEMENTARY COURSE 1 3 ects

#### Major subject studies in Bioinformatics 79–85 ects

BIOI2080 Introduction to Bioinformatics 4 ects

BIOI4280 Algorithms in Bioinformatics 4 ects

BIOI4260 Biological Data Analysis Project 4 ects

BIOI4270 Bioinformatics, Programming Course 4 ects

BIOI4211 Genomics, Transcriptomics and Proteomics 4 ects

BIOI4290 Tools for Intelligent Data Analysis 4 ects

BIOI4240 Structural Bioinformatics 4 ects

BIOI4230 Phylogenetics 4 ects

#### Systems biology / Data analysis 4–10 op

BIOI4200 Expression Data Analysis 4 ects

BIOI4220 Systems Biology I 4 ects

BIOI4201 Microarray Data Analysis, TUT SGN-6176 5 ects

BIOI4221 Computational Systems Biology, TUT SGN-6106 5 ects

BIOI4222 Signal Processing Graduate Seminar IV, TUT SGN-9406 3 ects

BIOI4030 Scientific Communication 3 ects

BIOI4031 M.Sc. Thesis 40 ects

BIOI4032 Maturity test

#### Compulsory minor subject studies 3–15 ects

BIOI2210 Introduction to Molecular Biology 3 ects

BIOI2220 Introduction to Biochemistry 3 ects

BIOI2250 Introduction to Programming 6 ects

BIOI2260 Introduction to Computer Science 3 ects

BIOI2230 Introduction to Genetics 3 ects

BIOI2270 Introduction to Statistics 3 ects

BIOI2290 Mathematics for Bioinformatics 3 ects

#### Optional studies 14–35 ects

BIOI4320 Advanced Mathematics for Bioinformatics 3 ects

BIOI4390 Major Transitions in Evolution 3 ects

BIOI4350 Protein Modelling 6 ects

BIOI4460 Journal Club 2 ects

BIOI4340 Text Mining in the Biomedical Domain 3 ects

BIOI4380 Bioinformatics Project 1–6 ects

#### Supplementary studies

BIOI0010 Supplementary Mathematics 3 ects