



# BB2440 Bioinformatics and Biostatistics 7.0 credits

## Bioinformatik och biostatistik

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Course syllabus for BB2440 valid from Autumn 16

This is a translation of the Swedish, legally binding, course syllabus.

**Grading scale:** A, B, C, D, E, FX, F

**Education cycle:** Second cycle

**Main field of study:** Biotechnology

### Intended learning outcomes

This is an introductory course in bioinformatics and biostatistics. After passing the course, the student should:

- know the theory behind fundamental bioinformatics analysis methods.
- be familiar with widely used bioinformatics databases.
- know basic concepts of probability and statistics.
- be able to describe statistical methods and probability distributions relevant for molecular biology data.
- know the applications and limitations of different bioinformatics and statistical methods.
- be able to perform and interpret bioinformatics and statistical analyses with real molecular biology data.

### Course main content

#### Disposition

The course consists of lectures and computer-based laboratory exercises.

#### Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

#### Eligibility

##### **Admission requirements for programme students at KTH:**

At least 150 credits from grades 1, 2 and 3 of which at least 100 credits from years 1 and 2, and bachelor's work must be completed. The 150 credits should include a minimum of 20 credits within the fields of Mathematics, Numerical Analysis and Computer Sciences, 5 of these must be within the fields of Numerical Analysis and Computer Sciences, 20 credits of Chemistry, possibly including courses in Chemical Measuring Techniques and 20 credits of Biotechnology or Molecular Biology.

##### **Admission requirements for independent students:**

A total of 20 university credits (hp) in Biotechnology or Molecular Biology. 20 credits of Chemistry, possibly including courses in Chemical Measuring Techniques and 20 credits within the fields of Mathematics, Numerical Analysis and Computer Sciences, 5 of these must be within the fields of Numerical Analysis and Computer Sciences, Documented proficiency in English corresponding to English B.

#### Literature

Zvelebil and Baum, Understanding Bioinformatics (2007), Garland Science

Biostatistics: The Bare Essentials. G. R. Norman and D. L. Streiner. (B.C. Decker, 3rd edition)

Listan kan komma att ändras. Ändringar kommer att annonseras på kursens hemsida senast fyra veckor före kursstart.

## **Examination**

- LAB1 - Laboratory Work, 2.0 credits, grading scale: P, F
- TEN1 - Written Examination, 5.0 credits, grading scale: A, B, C, D, E, FX, F

## **Requirements for final grade**

TEN1 – Written examination, 5.0 credits, grade scale: A, B, C, D, E, FX, F

LAB1 – Laboratory work, 2.0 credits, grade scale: P, F