SAHLGRENSKA AKADEMIN

Programme overview Master's Programme in Applied Biostatistics, 120 hec

Masterprogram i tillämpad biostatistik, 120 hp
Programkod: M2STA

Avancerad nivå/Second cycle

Semester 1

Semester 1 sets the scene: on the theoretical side, you will learn the mathematical background of statistical thinking and basics of the probability theory. This will include manipulation with formulas, basic operations with matrices, derivatives and integrals. On the practical side, you will be introduced to R programming to get the basis for data handling, analysis, reporting and visualizations. And you will also learn about study and experimental designs.

- Introduction to biostatistics, 9 hp
- R programming for applied biostatistics, 6 hp
- Study and experimental design, 7.5 hp
- Regression analysis, 7.5 hp

Semester 2

In semester 2 you will learn about methods highly relevant for answering real-life questions: methods for assessing causal relationships, for developing predictive models, for handling measurements of abstract quantities (e.g. quality of life) obtained using questionnaires.
- Causal inference, 7.5 hp
- Health data and questionnaires, 7.5 hp
- Statistical learning, 7.5 hp
- Advanced statistical methods, 7.5 hp

Semester 3

In semester 3 you will enlarge your statistical toolbox by adding methods for analyzing risks over time and by getting a broad overview of current machine learning methods employed for data analysis. You also have the opportunity to choose courses according to your interests either from our offer, or broadly within the university, or even abroad. This could be an opportunity to broaden your knowledge in health economics, clinical studies, or specialized statistical methods.
- Survival analysis, 7.5 hp
- Machine learning and AI, 7.5 hp
- Elective courses, 15 hp

Semester 4

Semester 4 is reserved for your master's thesis, which will give you the opportunity to learn how to independently carry out and present scientific work. You will be supported by your supervisor throughout the process.

- Master's thesis in Applied Biostatistics, 30hp

Practical experience

During the second and third semester, you will participate in statistical consultations provided by the Institute of Medicine, alongside experienced statisticians. Our consultants meet about 200 researchers from the Sahlgrenska Academy and the Västra Götaland region each year, helping them with statistical questions related to their research. You will shadow an experienced statistician and, depending on the project, may also work independently to some extent.