

## Entry Requirements

Applying for a master's degree generally requires you to hold an undergraduate degree, such as a bachelor's degree. Your degree can be in biology. Other successfully completed university degrees in bioinformatics, computer science, physics or mathematics, not related to teaching programs, and with at least 180 credit points also qualify you for admission, as long as at least 6 credit points in programming can be documented.

The Language of instruction is English. Therefore the program additionally requires proof of good English-language skills corresponding at least to the B2 level of the Common European Framework of Reference for Languages and, if German is not your native language, also German language skills commensurate with the A2 level of the Common European Framework of Reference for Languages.

You can find the exact prerequisites for admission in the subject-specific admission regulations at:  
[www.uni-potsdam.de/en/studium/studying/legalfoundations/zulassungsordnungen-fuer-master](http://www.uni-potsdam.de/en/studium/studying/legalfoundations/zulassungsordnungen-fuer-master)

## Application

All information about the current application and enrollment procedures can be found at the application website:  
[www.uni-potsdam.de/en/studium/application-enrollment/application-master/consecutive](http://www.uni-potsdam.de/en/studium/application-enrollment/application-master/consecutive)

The course of study starts (1st semester) only in winter semester.

## Further Information

Subject-specific Degree Regulations: [www.uni-potsdam.de/en/studium/studying/legalfoundations/studyregulations](http://www.uni-potsdam.de/en/studium/studying/legalfoundations/studyregulations)

Department pages: [www.uni-potsdam.de/en/ibb](http://www.uni-potsdam.de/en/ibb)

## Consultation & Contact

### Departmental Student Advisor

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E-Mail: [msbioinf@uni-potsdam.de](mailto:msbioinf@uni-potsdam.de)

### Postal Address

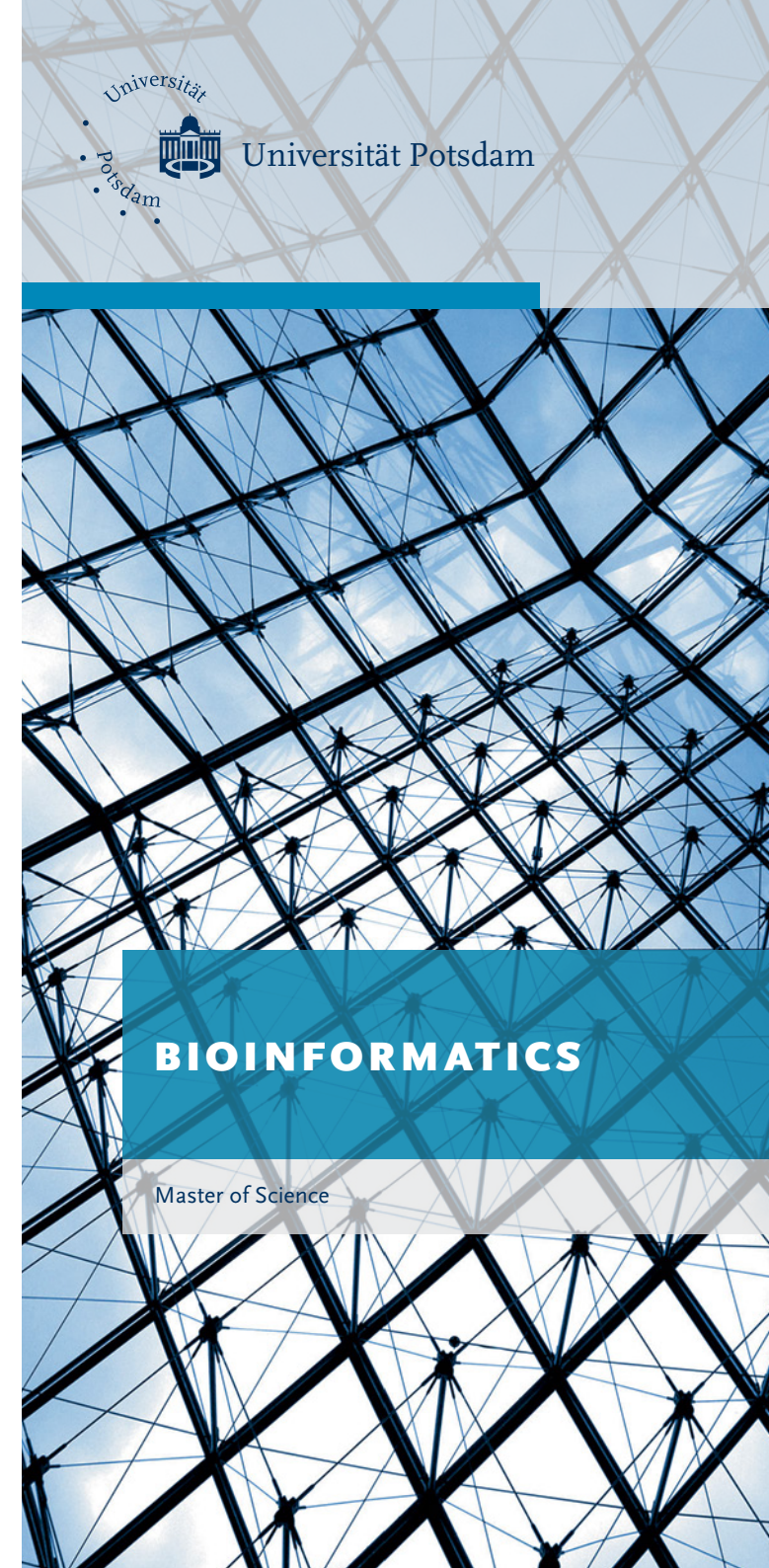
University of Potsdam  
Faculty of Science  
Institute of Biochemistry and Biology  
Karl-Liebknecht-Straße 24-25  
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### Central Student Advisory Service

Division of Student Affairs  
Campus Am Neuen Palais  
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[www.uni-potsdam.de/en/studium/advising-and-services/zsb](http://www.uni-potsdam.de/en/studium/advising-and-services/zsb)

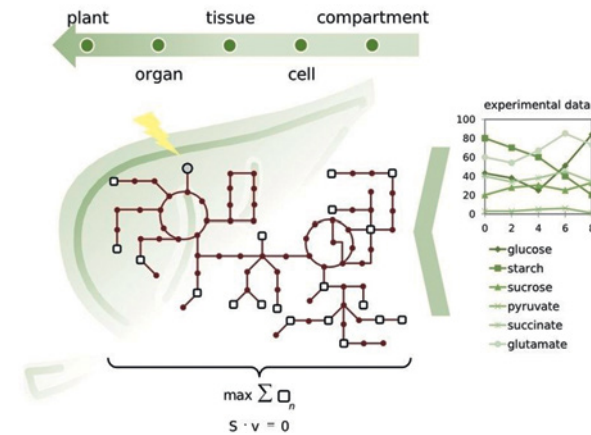
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**BIOINFORMATICS**

Master of Science



## Program Content

Bioinformatics is considered one of the disciplines whose discoveries are expected to have a lasting mark on modern history. Without bioinformatics the prospects of modern systems biology, systems medicine and systems genetic, including: personalized and effective medicine, the development of new and efficacious drugs or ensuring a high-quality supply of food, would be unthinkable to achieve. Bioinformatics has the development of modern techniques for analysis of large-scale biological data at its core, allowing us to dissect the organizing principles and functions of complex biological systems.

The English-language master's degree program in bioinformatics is an interdisciplinary, research-oriented program. The focus of the program is on systems biology, and is dedicated to the analysis of biological data and their integration in modeling of complex biological systems. Further priorities are the use of bioinformatics methods in breeding high-yielding plants as well as in identifying the mechanisms of action of small molecules and their pharmacological applications.

## Program Objective and Future Career Options

The master's degree program in bioinformatics aims at providing the basis for cross-disciplinary, independent research work.

The program further directs at preparing the students for their future endeavors at universities and research institutions, governmental agencies, in biotechnological or biomedical companies, as well as for their involvement in teaching and education.

## Program Structure and Curriculum

In the four-semester master's program, you earn a total of 120 credit points, consisting of the following modules and your master's thesis: for additional information, please consult the subject-specific Degree Regulations or the Departmental Student Advisor.

Programming Expertise	
<b>Mandatory Modules</b>	36 CP
Algorithmic and Mathematical Bioinformatics	6 CP
Statistical Bioinformatics	6 CP
Bioinformatics of Biological Sequences (Evolutionary Genomics)	6 CP
Analysis of Cellular Networks	6 CP
Introduction to Theoretical Systems Biology	6 CP
Constraint-based Modeling of Cellular Networks	6 CP
<b>Elective Modules</b>   You must successfully complete 4-6 of the 8 elective modules (if no bridge modules are necessary then 6 elective modules).	24 CP
Data Integration in Cellular Networks	6 CP
Advanced Methods for Analysis of Biochemical Networks	6 CP
Quantitative Genetics	6 CP
Image Processing and Phenotyping in Bioinformatics	6 CP
Structural Bioinformatics	6 CP
Machine Learning in Bioinformatics	6 CP
Integration of Cellular Layers and Systems	6 CP
Practical Sequence Analysis	6 CP
<b>Bridge Modules</b>   You must successfully complete 0-2 of the 4 bridge modules (so either 0, 1 or 2 bridge modules).	12 CP
Introduction to Databases and Practical Programming	6 CP
Programming Expertise	6 CP
State of Art in Biochemistry and Molecular Biology	6 CP
Molecular, Structural and Evolutionary Biology for Informaticians	6 CP
<b>Project Work</b>	18 CP
<b>Master's Thesis</b>	30 CP
<b>Total</b>	<b>120 CP</b>