Entry Requirements

Applying for a master's degree generally requires you to hold an undergraduate degree, such as a bachelor's degree. A first degree in either computer science or mathematics qualifies you in any case for this master's degree. A degree in information systems or natural sciences qualifies you if your first degree strongly emphasized content from the areas of computer science or mathematics. Depending on your background, bridge modules can be complete gaps in the other respective discipline. The Language of instruction is English. Therefore the program additionally requires proof of good English-language skills corresponding at least to the C1 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

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

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*

Department pages: *www.uni-potsdam.de/en/cs*

Consultation & Contact

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Universität Potsdam

DATA SCIENCE

Master of Science

The interdisciplinary field of data science deals with methods for using data to automatically produce knowledge, insights, and models for prognosis, risk, and action. The master's degree program, which is taught in English, connects machine learning, statistical data analysis, natural scientific methods of data assimilation, and business analytics. The program offers broad and interdisciplinarily structured training in methods and is characterized by a strong emphasis on practice and research.

Program Content

The interdisciplinarily structured master's degree in data science combines content from computer science, mathematics, information systems, and the natural sciences. Core courses provide you with an overarching understanding of machine learning and deep learning, statistical data analysis, data assimilation, business analytics, and big data infrastructures. More specialized courses help you engage with the current state of research for the areas of your choosing.

In seminars, you will work through complex topics, and in the module of applied data science, you will apply, in practice, the competences you have acquired. In the research module, you will be connected to a research project at the University of Potsdam or one of Potsdam's many research institutions. An industry internship is also possible as an option. Berlin/Potsdam's lively start-up scene and many big data companies offer ample opportunities for internships.

Program Objective and Future Career Options

Data scientists are in equally strong demand in many areas of the economy and in research. Career paths exist in areas where large quantities of big data are created that can serve as the basis for decision-making, prognoses, and intelligent action. These include, for example, online commerce; search machines; the finance sector; the automobile, pharmaceutical, and manufacturing industries; meteorology; and climate research.

The master's degree offers you an accordingly large number of possible career paths. The degree prepares you for a career as a manager or highly qualified expert in a company, for founding a company of your own, or for completing a PhD and pursuing a research career in computer science, mathematics, or the natural sciences.

The University of Potsdam is a leading center of research in data science. The Collaborative Research Center „Data Assimilation", for example, investigates the integration of data and natural scientific models in cognitive neurosciences, biophysics, and earth sciences. The degree program opens up excellent career opportunities for you in research, established companies, and the start-up scene.

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.

Modules	
Mandatory modules	48 CP
Machine Learning	9 CP
Statistical Data Analysis	9 CP
Bayesian Inference and Data Assimilation	9 CP
Data Infrastructures and Software Engineering	6 CP
Data Science and Business Analytics	9 CP
Applied Data Science	6 CP
Elective modules	42 CP
Research module A or B	
Advanced modules Advanced Machine Learning A, B Advanced Statistical Data Analysis A, B Advanced Data Assimilations and Modeling A, B Advanced Infrastuctures and Software Engineering A, B Advanced Business Analytics A, B Advanced Applied Data Science A, B Mathematical Foundations of Data Science A, B Computer Engineering for Big Data Computational Foundations of Data Science Research Data Management, Law and Ethics Applied Data Science Internship Advanced Problem Solving Techniques	
Bridge modules	12 CP
Foundations of Computer Science	
Foundations of Stochastics	
Master's Thesis	30 CP
Total	120 CP