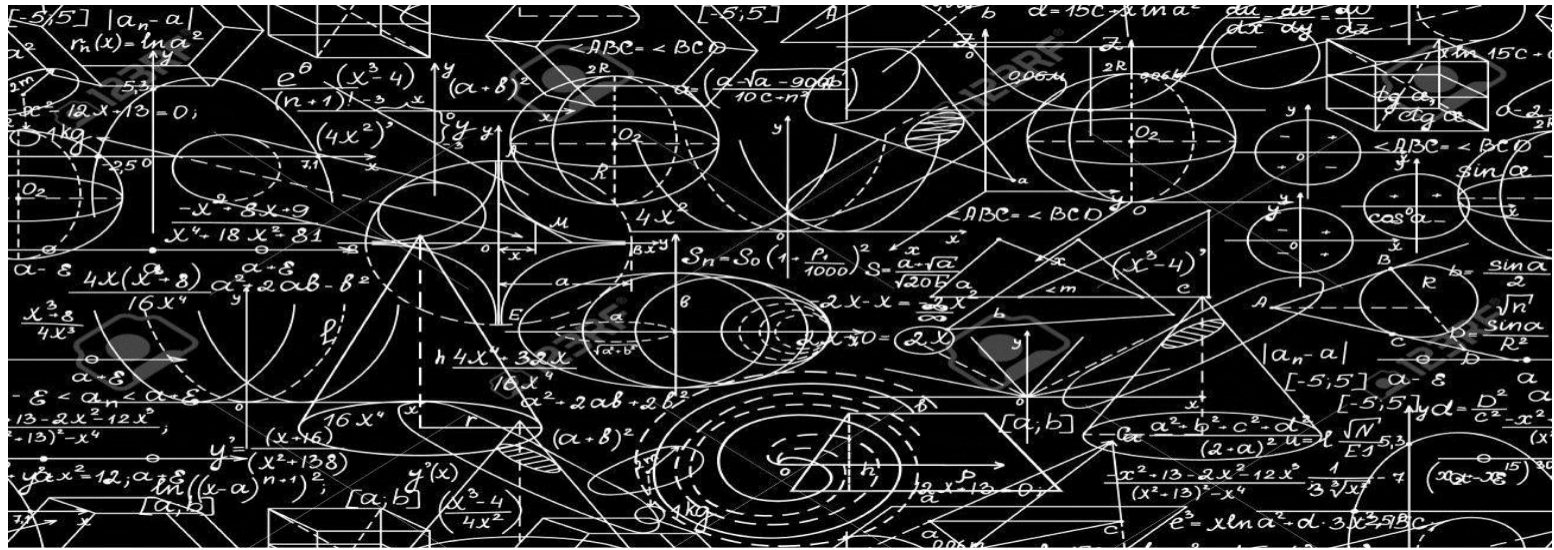


Branch:Mathematical Engineering



Code: MADASC

Option: Mathematics in data science

Level: Master

Prerequisites:

Opportunities:

The Master's program "Mathematics in Data Science" prepares students for a professional career in the interdisciplinary environment of a wide range of industries. Typical fields of activity are research and development, the financial industry, insurance, logistics, biotechnology and healthcare, and computer security.

Description:

The Master's program "Mathematics in Data Science" is aimed at students who are interested in a challenging mathematical education focused on the future field of Big Data.

What is the purpose of this study program?

The Master's program "Mathematics in Data Science" is a full-time Master's program with a standard study period of four semesters. It builds on the Bachelor's degree in mathematics or computer science (with a minor in mathematics) or comparable studies.

The Master's program "Mathematics in Data Science" is aimed at students who are interested in a challenging mathematical education focused on the future field of Big Data. This training enables graduates to understand in detail the complex procedures of data preparation and analysis, to adapt complex models to concrete problems, to combine them or develop new ones and to derive prediction and classification models. You will be able to evaluate the possibilities and limitations of different algorithms and develop algorithms to solve specific problems.

Quality and competences:

Graduates of the Mathematics in Data Science program are particularly distinguished by the following skills and competences:

Graduates are familiar with various statistical methods for classification and evaluation of big data (e.g. sequence and cluster analysis).

Graduates are familiar with methods of representation and reduction of large datasets, through which data can be examined according to certain structural characteristics (e.g. spectral analysis, compressed detection).

On the basis of various analysis methods, graduates are able to develop mathematical models to identify and analyze correlations in data.

On this basis, they develop complex predictive models that allow statements to be made about data and future developments.

Graduates are familiar with methods of secure and confidential data storage and are familiar with the problems of anonymous and aggregated data.

Graduates are familiar with the technical basics of storage and analysis. Graduates of the Master program "Mathematics in Data Science" are able to identify questions concerning future problems on the basis of the current state of research, to formulate research hypotheses and to develop a research plan. Graduates are able to assess the societal challenges associated with the practical handling of large amounts of data and the information it contains.

Graduates are able to understand in detail complex data preparation and analysis procedures, to adapt complex models to concrete problems, to combine them or develop new ones and to derive prediction and classification models.