

# Self-disclosure for M.Sc Data Science at TU Dortmund University

Dear interested Data Science students,

Many thanks for your interest in our Master program. Before you apply for our program, we ask you to carefully read and fill out this document. It will help you to pre-check our admission criteria and to evaluate whether you are eligible for our program. You have to sign this document in the end to confirm that you completed the self-test and the special functional qualification.

|                                       |  |
|---------------------------------------|--|
| Surname/Family name:                  |  |
| First name/Given name:                |  |
| Date of birth:                        |  |
| Bachelor degree:                      |  |
| Bachelor University (name and place): |  |

## Admission requirements

In order to be eligible for our Master program, you have to fulfill five different admission criteria. As long as you fulfill all of these criteria, a seat in our program is guaranteed for you. The program is free of restriction.

### Criterion 1: Orientation of your Bachelor degree

In order to be eligible, your Bachelor degree has to be the Bachelor degree in *Data Science* from TU Dortmund University. Alternatively, we consider your Bachelor degree to be eligible, if it is Computer Science / Mathematics / Statistics oriented. It has to be not just from one of these three fields, but **it has to cover the important basics of all three of these fields**. More specifically, our examination regulations define clear criteria for this, which your Bachelor's program must fulfill. You can find the details on our website ([https://www.statistik.tu-dortmund.de/ds\\_admission.html](https://www.statistik.tu-dortmund.de/ds_admission.html))

First, you have to transform the credits (or hours per week) of your university into our ECTS system. To do so, calculate your average number of credits per semester. Divide 30 by this number and multiply all of your credits with this factor. For example, if you had 20 credits per semester on average, you have to multiply your credits with 1.5.

We require your Bachelor program to contain the following achievements. Please list them in the tables below. If you do not fulfill all of these criteria, it might nevertheless be possible that you can be admitted under certain conditions. Please note that each of your courses can only be counted once.

We are not allowed to count any additional qualifications, such as courses from additional master degrees, professional experience or online courses from platforms like Coursera. Please only list courses from your Bachelor program.

1. 8 ECTS in mathematics courses. Possible fields for those courses are "Calculus", "Linear Algebra", "Differential Equations", "Discrete Mathematics" and "Numerics". If your Bachelor did not cover at least 10 ECTS in "Calculus" and "Linear Algebra", you will have to take the additional (pre-requisite) course "Advanced Engineering Mathematics" after enrollment.

| Course title | ECTS |
|--------------|------|
|              |      |
|              |      |
|              |      |
|              |      |

2. 8 ECTS in Computer Science courses. Possible fields for those courses are “Programming”, “Algorithms”, “Data Structures”, “Object-Oriented Programming” and “Software Engineering”. If your Bachelor did not cover 8 ECTS in courses about “Data Structures, Algorithms and Programming” that are on the level of a Bachelor in Computer Science, you have to take such a (pre-requisite) course after enrollment. E.g., if your degree only covered a single course “Introduction to Programming / Computer Science”, you would have to take the pre-requisite.

| Course title | ECTS |
|--------------|------|
|              |      |
|              |      |
|              |      |

3. A course of at least 4 ECTS that covered an introduction to (descriptive) statistics or probability theory. Please note: It must be a single course entirely focused on statistics. For example, a combined course on “Numerical and Statistical Methods” would not count here. If your Bachelor did not cover such a course, than you are not eligible for our program.

| Course title | ECTS |
|--------------|------|
|              |      |

4. Courses of at least 8 ECTS in the field of Advanced Statistics, possible fields for those courses are “point estimation”, “interval estimation”, “hypothesis testing” and “stochastics”. If you do not fulfill this, you have to take such a course as a pre-requisite after enrollment.

| Course title | ECTS |
|--------------|------|
|              |      |
|              |      |

5. The sum of courses in 1., 2., 3. And 4. must be at least 44 ECTS. If your sum of courses is less, than you are not eligible.

| Sum of ECTS |
|-------------|
|             |

6. A course of at least 4 ECTS in the field of introduction to databases. If you did not attend such a course during your Bachelor, you have to take one as a pre-requisite after enrollment.

| Course title | ECTS |
|--------------|------|
|              |      |

7. Courses of at least 8 ECTS in the field of Data Modelling, possible fields are “(generalized) linear linear models”, “statistical / machine learning methods”, “time series”, “artificial intelligence”, “neural networks”, “deep learning” and “(practical) optimization”.

| Course title | ECTS |
|--------------|------|
|              |      |
|              |      |

It is only allowed to take pre-requisite in one of the three areas 2., 4. and 7. If you would have to take pre-requisites in at least two of these areas, than you are not eligible for our program.

## Criterion 2: Final grade of your Bachelor degree

The final grade of your Bachelor degree has to be at least “good” (i.e., 2.5 in the German system). We will use the so-called “modified Bavarian formula” to calculate your German grade. If your grade is less than “good”, there is no way to change this and in this case you are not eligible.

## Criterion 3: Language requirements

Our Master program is entirely taught in English language. Hence, you have to prove sufficient English language skills in order to participate in our Master. We require at least B2 level or better. We accept the following proofs:

1. German certificate of general qualification for university entrance (English from 5th or 7th grade up to the Abitur). This usually applies for students who did their school education in Germany,
2. an internationally recognized language certificate (typically, IELTS or TOEFLS),
3. a diploma from an English-speaking school or an English-speaking course of study, i.e., if your study program was taught in English, we accept this as a sufficient language proof,
4. comparable evidence.

Since most of the other programs at TU Dortmund University are taught in German language, it is also allowed to take courses in German language during our program. However, note that you need very good German language skills to participate in those courses. Since it is possible to finish the program with just taking courses in English language, you do not need to prove any German language skills during the application process.

However, since you will have to live in Dortmund during your studies, we recommend you to learn at least a bit German. It makes bureaucracy, shopping and other activities of everyday life a lot easier.

## Criterion 4: Participation in the self-assessment test

In order to help you to assess your own scientific skill level and to help you understand which a-priori basic knowledge we expect from you, we implemented an online self-assessment test in which you have to participate. Please note that this test is **not graded**, we are not interested in how good or how bad you performed in this test, the test is only designed to give you a feedback of whether your knowledge is sufficient for our Master program.

Hereby I confirm that I did participate in the online self-assessment test.

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Place and Date

Signature

## Criterion 5: Special functional qualification

In order to determine whether you have the skills and knowledge required to successfully complete the Master's program, it is necessary to prove special functional qualification for a Master's program in Data Science at the TU Dortmund University. The special functional qualification is considered to be automatically proven if you have completed a Bachelor's degree in *Data Science* or *Data Analysis and Data Management* at the TU Dortmund University with at least the final grade "good" (2.5).

If you have completed a statistically, computer science or mathematically oriented course of study with empirical application with a final grade of at least "good" (compare admission criteria 1 and 2), you must successfully participate in a data analysis project provided on our website to prove your special functional qualification. You must do so independently and without unauthorized aids. For this purpose, a final report on the data analysis project must be written and submitted together with the other application documents. In this case, the special functional qualification is proven if on the basis of the final report it is determined that you possess the specialist knowledge and skills required for a Master's degree in Data Science at TU Dortmund University.

More details on the task for the current semester can be found on our admission website: [https://www.statistik.tu-dortmund.de/ds\\_admission.html](https://www.statistik.tu-dortmund.de/ds_admission.html).

Hereby I confirm that I submitted the requested Statistical Report. I confirm that I did write the report independently and without unauthorized aids. I understand that my admission may be declared to be invalid if I violate this.

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Place and Date

Signature