Deutscher Akademischer Austauschdienst
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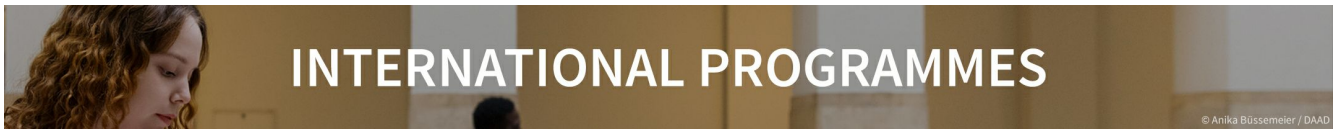

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Master's degree **2**

Data Science • University of Regensburg • Regensburg 2

Master's degree

Data Science

University of Regensburg • Regensburg

Overview

Degree	Master of Science in Data Science (with specialisation in Machine Learning and Statistics, Computational Life Sciences, Human-Centred Data Science or Information Systems)
Course location	Regensburg
Teaching language	• English
Languages	The study programme can be completed entirely in English. In the compulsory elective area, a few courses are also offered in German.
Full-time / part-time	• full-time • part-time (study alongside work)
Programme duration	4 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	The lecture period generally runs from mid-October to the beginning of February in the winter semester and from mid-April to the end of July in the summer semester. The exact lecture times at the University of Regensburg can be found here: https://www.uni-regensburg.de/studies/semester-calendar/index.html. The degree programme is designed as a face-to-face course, and certain courses are also offered online.
Application deadline	1 June for the following winter semester, 1 December for the following summer semester Non-EU applicants are strongly advised to apply for the winter semester by 15 April at the latest and for the summer semester by 15 October at the latest in order to be able to apply for a visa as soon as possible if they are admitted.
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No

Description/content

Data scientist, AI expert, data engineer, data analyst – you can be all of these with your degree from the Master's degree programme in Data Science. In addition, all doors are open to you in application fields of data science, such as biomedical research, the technology industry, business or other future-oriented fields. Your MSc in Data Science will prepare you to develop innovative solutions for complex problems and to work in an interdisciplinary field. During your studies, you can deepen or expand your knowledge in advanced topics of statistics and machine learning and specialise in specific areas of application.

The degree programme is divided into:

- a compulsory area (including Master's thesis) (min. 66 CP)
- the compulsory elective area "Machine Learning and Statistics" (min. 12 CP)
- the compulsory elective area "Specialisation" (at least 42 CP)

Not to be missed: the compulsory area

Advanced knowledge of current trends in deep learning and reinforcement learning is essential for us when studying data science. You will acquire this at the beginning of your studies in the lecture "Modern Machine Learning" with associated lab (6 CP). Two elective modules allow you to complete courses from computer and data science or from other subject areas according to your own interests (12 CP each). The compulsory area is completed by a seminar on current topics in data science (6 CP) and the Master's thesis module (30 CP).

It all comes down to the core: the compulsory machine learning and statistics elective area

You choose modules worth at least 12 CP from 11 planned modules, all of which are dedicated to central topics in data science and machine learning. Examples of modules are Statistical Machine Learning, Advanced Statistics I and II, Advanced Explainable AI, Advanced Data Engineering, Digital Image Processing – AI-based approaches, etc.

Whatever you want: the specialisation elective area

You can choose from four specialisations during your studies. You must choose one of these as a specialisation by completing modules amounting to at least 42 CP from the specialisation (according to specified regulations). You can choose between the specialisations:

- Machine Learning and Statistics
- Computational Life Sciences
- Human-Centred Data Science
- Information Systems

In all specialisations, there is a compulsory elective area, so that you can also choose modules within a specialisation according to your interests. The choice of a specialisation is mandatory.

Course Details

Course organisation

Our courses

You will mainly attend lectures with accompanying exercises, seminars and project seminars or internships. In lectures with accompanying exercises, you will be taught knowledge and methods that you can apply yourself in the exercises, whereby you will acquire subject-specific skills through your own application. In the tutorials, exercises are usually offered as coursework, which are compulsory or can be completed voluntarily. The examination usually consists of a written or oral examination in which the acquired knowledge and the ability to apply methods are tested. Seminars pursue the primary goal of enabling you to independently explore a scientific field of data science, to grasp the state of research on a current topic and to design, prepare and critically evaluate scientific presentations and texts. In these cases, a presentation on a selected topic is therefore planned as coursework, while the examination consists of a written paper. In all specialisations of the MSc Data Science, (project) seminars and practicums are offered in which students (usually in teams) gain experience in research practice and independently carry out a research project in preparation for the final thesis. This research project includes a presentation of

the planned project as coursework, and a project paper or its documentation is usually required as an examination.

Our programme

Studying for a Master's degree in Data Science at the University of Regensburg means that you will become an expert in one of the key disciplines of our time at the interface of statistics, computer science and applied sciences. You can choose which specialisation you would like to focus on. For a successful degree, you have to complete a total of 120 CP through:

- the compulsory area of at least 66 CP (incl. Master's thesis): the compulsory area includes the modules "Modern Machine Learning", "Free Elective", "Studium Universale", "Current Topics in Data Science" and the Master's thesis
- the compulsory elective area "Machine Learning and Statistics" of at least 12 CP: In the compulsory elective area, a total of at least eight modules of 6 CP each are offered.
- the compulsory elective area “Specialisation” with the mentioned four specialisations of at least 42 CP: Compulsory and elective modules must be completed in all specialisations. If at least 42 CP from a single specialisation are completed following the conditions defined in each case and the Master's thesis is completed on a topic from the specialisation, the completed specialisation can be shown on the Master's certificate.

In the first three semesters of your studies, you will complete courses from the compulsory area, the compulsory elective area "Machine Learning and Statistics" and the compulsory elective area "Specialisation". In the fourth semester, you can devote yourself entirely to your Master's thesis project (see also the attached PDF on course organisation).

» PDF Download

A Diploma supplement will be issued	Yes
Certificates for specific modules are awarded	Yes
Description of other international elements	All courses and modules of the degree programme are taught in English.
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR	None
Semester contribution	Student service fee: approx. 180 EUR per semester (includes a public transport ticket valid for the entire semester)
Costs of living	You will need a minimum of about 950 EUR per month (including rent, food, clothing, insurance, books, and study materials).

Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	Students from non-EU countries can apply for the study grant for international students in financial need at the University of Regensburg. Also see: https://www.uni-regensburg.de/ur-international/incomings/pursuing-a-degree-program/founding/index.html.

Requirements / Registration

Academic admission requirements	If you want to study the MSc Data Science at the University of Regensburg, you should have: • a Bachelor's degree with a final grade of 2.5 or better (or at least 138 CP in your current Bachelor's degree with a provisional final grade of 2.5 or better) - If you have not already studied data science or computer science in your Bachelor's degree, but are burning with interest in data science, you can be admitted if you fulfil the other requirements. • completed credits from the field of data science amounting to 30 CP and from the field of mathematics amounting to 18 CP (From a total of 30 CP from data science and mathematics, you can be conditionally admitted.) • proof of English at level C1 CEFR or a Bachelor's thesis written in English (details below) • International applicants must also prove their subject knowledge by passing a Graduate Record Examination (GRE) General Test. Further details on the requirements as well as further information on the admission procedure, deadlines and necessary documents will be available on our website: https://www.uni-regensburg.de/informatics-data-science/faculty/study-at-fids/prospective-students/new-masters-degree-programs-at-fids/index.html.
Language requirements	Adequate English language skills at level C1 of the Common European Framework of Reference for Languages (CEFR) are required. Students whose language of study has not been English must provide proof of this by means of a recognised language test such as the "Test of English as a Foreign Language" (TOEFL) (at least 79 points) or the "International English Language Testing System" (IELTS) (at least 6.5 points) or equivalent proof. If the final thesis (Bachelor's thesis) was written in English, this is also a proof of adequate English language skills. No knowledge of German is required, but it is recommended that students acquire a knowledge of German during their studies.
Application deadline	1 June for the following winter semester, 1 December for the following summer semester Non-EU applicants are strongly advised to apply for the winter semester by 15 April at the latest and for the summer semester by 15 October at the latest in order to be able to apply for a visa as soon as possible if they are admitted.
Submit application to	https://campusportal.uni-regensburg.de/qisserver/pages/cs/sys/portal/hisinoneStartPage.faces

Services

Possibility of finding part-time employment	Students from EU member states and Switzerland do not need a work permit. Students from non-EU states who are registered at a German university are allowed to work 140 days per year. Please note that almost all employers require good German language skills.

Accommodation	The International Office will try to assist students in finding a room in a student dormitory or on the private market. The price for a room in a student dormitory ranges from approx. 300 EUR to 450 EUR per month. For more information about student housing, please contact international.accommodation@ur.de.
Career advisory service	The Marketing and Career Service of the University of Regensburg supports all students in their professional orientation during their studies (https://www.uni-regensburg.de/wirtschaftswissenschaften/service/marketing-career/startseite/index.html).
Support for international students and doctoral candidates	• Welcome event • Tutors • Visa matters • Help with finding accommodation • Support with registration procedures
General services and support for international students and doctoral candidates	Students can contact the Central Student Advisory Service of the University of Regensburg, the Student Advisory Service of the individual subjects of the Faculty of Informatics and Data Science and the course coordination of the Informatics and Data Science courses at the Faculty of Informatics and Data Science. For international students, the International Office also offers a point of contact for all questions relating to studying. In addition, the University of Regensburg has a wide range of other advice centres for special concerns and life situations (including learning advice, family service). An overview can be found at https://www.uni-regensburg.de/studies/home/index.html.

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