



Welcome to Freiberg

winter semester 2025/26

Dean of Studies – Prof Dr Björn Sprungk

October 13th, 2025

A very warm welcome to study in Freiberg

Some information:

- ❑ Mathematics for Data and Resource Sciences (Master)
- ❑ Abbreviation **MDRS**
- ❑ 4th year of enrolling students

Structure of the Master's Programme

1st Semester	2nd Semester	3rd Semester	4th Semester
Mathematics of Machine Learning (6 LP)	Mathematical Electives (49-61 LP)		Master Thesis (30 LP)
Basics in PDEs (4 LP)			or
Geomodelling (5 LP)			Master Thesis + Internship (20 + 10 LP)
Applied Problems in Data Science / Mathematical Problems in Resource Science / ... (4-12 LP)			
Languages (4-8 LP)		Mathematics Seminar (6 LP)	

- ❖ 4 semesters
- ❖ Lectures start on October 20th, 2025 (VISA-issues? Often online lectures possible!)
- ❖ 2 additional certificates possible
- ❖ Reduced Master's Thesis possible (given industrial internship of 4 months)

Certificates

Criteria to obtain certificates

To obtain a certificate of specialisation either in Geomathematics/Resource Sciences or in Data Science the student is required to obtain 55 CPs from the courses of either of the following lists.

Geomathematics (GM)

Advanced Theory of Potential Fields
Aktuelle Themen der Numerik I und II
Basics of Climate Change for Non-Geocologists
Continuum Multiphysics in the Geosciences
Differential Geometry
Ecosystems
Finite-Element-Methoden für Mathematiker
Fourier Analysis
Geometry and Topology
Global Analysis
Introduction to High Performance Computing and Optimization
Introduction to Meteorology and Climatology
Inverse Problems
Inverse Problems in Geophysics
Mathematical Problems in Resource Science
Mathematik der kristallographischen Texturanalyse
Modellierung und Simulation
Multivariate Statistik und Zeitreihenanalyse
Numerical Simulation Methods in Geophysics
Numerik nichtlinearer Optimierungsprobleme und nichtlinearer Gleichungssysteme
Parallel Computing
Probabilistic Forecasting and Data Assimilation
Scientific Computing Project
Selected Topics in Applied Operator Theory
Selected Topics in Partial Differential Equations
Stochastische Geometrie und räumliche Statistik
Theory of Electromagnetic Methods
Theory of Potential Methods
Uncertainty Quantification

Mathematical Data Science (DS)

Aktuelle Themen der Numerik I und II
Algorithmik
Algorithmische Geometrie
Algorithmische Graphentheorie
Angewandte Statistik
Applied Problems in Data Science
Einführung Machine Learning und Big Data
Geometry and Topology
Introduction to Meteorology and Climatology
Introduction to High Performance Computing and Optimization
Mathematical Image Processing
Methods in Machine Learning
Methods of Applied Algebra
Microbiology for Resource Scientists: Lecture
Microbiology of Fossil and Regenerative Energy Resources
Molecular Ecology of Microorganisms
Multivariate Statistik und Zeitreihenanalyse
Numerik nichtlinearer Optimierungsprobleme und nichtlinearer Gleichungssysteme
Probabilistic Forecasting and Data Assimilation
Random Graphs
Scientific Computing Project
Statistical Shape Analysis
Statistische Analyse von Systemen
Stochastische Geometrie und räumliche Statistik
Stochastische Optimierung
Topological Data Analysis
Vektoroptimierung
Wavelets

Certificates ctd

Exemplarischer Studienablaufplan mit Fokus Geomathematics

Modul	1. Sem. V/U/S/P	2. Sem. V/U/S/P	3. Sem. V/U/S/P	4. Sem. V/U/S/P	LP
Pflichtmodule					
Deutsch A1/ 1. Semester ¹	0/4/0/0				4
Deutsch A1/ 2. Semester ¹		0/4/0/0			4
Seminar Mathematics for Data and Resource Sciences			0/0/2/0		6
Master Thesis (Mathematics for Data and Resource Sciences)				x	30
Basics in Partial Differential Equations	2/1/0/0				4
Mathematics of Machine Learning			3/1/0/0		6
Geomodelling – Geostatistics for Natural Resource Modelling	2/0/0/2				5
Allgemeine Wahlpflichtmodule					
Allgemeine Wahlpflichtmodule: Analysis					
Mathematics of crystallographic texture analysis		2/1/0/0			5
Selected Topics in Partial Differential Equations		2/1/0/0			5
Inverse Problems			2/1/0/0		5
Allgemeine Wahlpflichtmodule: Discrete Mathematics / Algebra					
Geometry and Topology			2/2/0/0		6
Allgemeine Wahlpflichtmodule: Numerics / Optimisation					
Modeling and Simulation (in geraden Jahren)	4/2/0/0				9
Scientific Computing Project (in ungeraden Jahren)	0/0/3/0				6
Numerical Methods for Nonlinear Optimization and Nonlinear Systems (in geraden Jahren)			4/2/0/0		9
Finite Element Methods (FEM) for Mathematicians (in ungeraden Jahren)					
Allgemeine Wahlpflichtmodule: Stochastics					
In ungeraden Jahren: Uncertainty Quantification	3/1/0/0				6
Probabilistic Forecasting and Data Assimilation		2/1/0/0			5
Stochastic Geometry and Spatial Statistics (in geraden Jahren)	2/1/0/0	2/1/0/0			9
Allgemeine Wahlpflichtmodule: Nebenfach					
Basics of Climate Change for Non-Geocologists (in geraden Jahren)	2/1/0/0				5
Numerical Simulation Methods in Geophysics (in ungeraden Jahren)	2/2/0/0				6
Mathematical Problems in Resource Science			2/0/0/0		4
Continuum Multiphysics in the Geosciences		2/0/0/0			4

Exemplarischer Studienablaufplan mit Fokus Mathematical Data Science

Modul	1. Sem. V/U/S/P	2. Sem. V/U/S/P	3. Sem. V/U/S/P	4. Sem. V/U/S/P	LP
Pflichtmodule					
Deutsch A1/ 1. Semester ¹	0/4/0/0				4
Deutsch A1/ 2. Semester ¹		0/4/0/0			4
Seminar Mathematics for Data and Resource Sciences			0/0/2/0		6
Master Thesis (Mathematics for Data and Resource Sciences)				x	30
Basics in Partial Differential Equations	2/1/0/0				4
Mathematics of Machine Learning	3/1/0/0				6
Geomodelling – Geostatistics for Natural Resource Modelling			2/0/0/2		5
Allgemeine Wahlpflichtmodule					
Allgemeine Wahlpflichtmodule: Analysis					
Wavelets (in geraden Jahren)			3/1/0/0		6
Mathematical Image Processing (in ungeraden Jahren)					
Allgemeine Wahlpflichtmodule: Discrete Mathematics / Algebra					
Geometry and Topology	2/2/0/0				6
Topological Data Analysis		2/2/0/0			6
Allgemeine Wahlpflichtmodule: Numerics / Optimisation					
Current Topics in Numerical Analysis			3/0/0/0		6
Scientific Computing Project			0/0/3/0		6
Introduction to High Performance Computing and Optimization			2/1/0/0		4
Allgemeine Wahlpflichtmodule: Stochastics					
Methods in Machine Learning		2/1/0/0			5
Multivariate Statistical Analysis and Time Series (in geraden Jahren)	2/1/0/0	2/1/0/0			9
Applied Statistics (in ungeraden Jahren)					
Allgemeine Wahlpflichtmodule: Nebenfach					
Introduction to Meteorology and Climatology	2/2/0/0				4
Introduction to Machine Learning and Big Data		2/2/0/0			6
Applied Problems in Data Science			2/0/0/0		4

Important documents / informations

- ❖ Examination and Study regulations, Modules and Descriptions

<https://tu-freiberg.de/en/master-mathematics-data-and-resource-sciences>

- ❖ General information

<https://tu-freiberg.de/en/study/study>

<https://tu-freiberg.de/en/fakultaet1/study>

- ❖ Semester dates such as re-registration, exam dates and registration, ...

<https://tu-freiberg.de/en/study/study/study-organization/semester-dates>

- ❖ Timetables

<https://evlvz.hrz.tu-freiberg.de/~vover>

Timetables and schedule for the 1st Semester

Stundenplan Wintersemester 2025 / 2026 (20.10.2025 - 13.02.2026)



Find timetables and schedule (in German) at <https://evlvz.hrz.tu-freiberg.de/~vover/>

- Title of a lecture is not necessarily the title of the corresponding modul!
- V/Ü/S/T/P means number of Lectures/Exercises/Seminars/Tutorials/Practical courses
- Room XXX-ABCD (e.g., SQP-1301) means:
 - “XXX” is a bilding short-cut, see here
 - “A” refers to floor level
 - “BCD” is some individual room number

Alle Angaben ohne Gewähr!

Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Ohne Angaben
08:00-09:30 Gerade Woche WÜ-11.1 Übung Mathematics of Machine Learning G. Mayr	08:00-09:30 Gerade Woche WÜ-11.1 Übung Mathematics of Machine Learning G. Mayr	08:00-09:30 Gerade Woche WÜ-11.1 Vorlesung Exercises (V) Holtner, Herrmann	08:00-09:30 Wöchentlich WÜ-11.1 Übung Introduction to Meteorology and Climatology Zimmermann, Frank		
09:45-11:15 Wöchentlich WÜ-11.1 Vorlesung Theory of Potential Bücker, Ralph-Uwe	09:45-11:15 Wöchentlich WÜ-11.1 Vorlesung Theory of Potential Bücker, Ralph-Uwe	09:45-11:15 Wöchentlich WÜ-11.1 Übung Exercises (Ü) Holtner, Herrmann	09:45-11:15 Wöchentlich WÜ-11.1 Vorlesung Introduction to High Performance Computing and Data Science Holtner, Herrmann	09:45-11:15 Gerade Woche Ü-11.1 Seminar Molecular Ecology of Microorganisms Holtner, Herrmann	
				09:45-11:15 Gerade Woche Ü-11.1 Vorlesung Molecular Ecology of Microorganisms (V) Holtner, Herrmann	
11:30-13:00 Wöchentlich WÜ-11.1 Vorlesung Deutsch f. Ausl. A2/L Sem. Gr. 5 Pacheco, Hitzina (LA) Pacheco, Hitzina (LA)	11:30-13:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. A2/L Sem. Gr. 5 Pacheco, Hitzina (LA)	11:30-13:00 Wöchentlich WÜ-11.1 Vorlesung Introduction to Partial Differential Equations Zimmermann, Frank	11:30-13:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. A2/L Sem. Gr. 5 Pacheco, Hitzina (LA)	11:30-13:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. B1/L Sem. Gr. 4 Gebhardt, Kathlen (LA)	
		11:30-13:00 Gerade Woche WÜ-11.1 Übung Theory of Potential Bücker, Ralph-Uwe		11:30-13:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. B2/L Sem. Gr. 3 Barr, Katerina	
14:30-16:00 Wöchentlich WÜ-11.1 Vorlesung Geometrie Gottschalk, Michael Gottschalk, Michael	14:30-16:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. A2/L Sem. Gr. 3 Pacheco, Hitzina (LA)	14:30-16:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. A2/L Sem. Gr. 3 Pacheco, Hitzina (LA)	14:30-16:00 Wöchentlich WÜ-11.1 Praktikum Scientific Computing Projekt P Köhler, Stephan	14:30-16:00 Wöchentlich WÜ-11.1 Übung Geometrie Gottschalk, Michael Gottschalk, Michael	
	14:30-16:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. B2/L Sem. Gr. 3 Barr, Katerina	14:30-16:00 Wöchentlich WÜ-11.1 Übung Deutsch f. Ausl. B1/L Sem. Gr. 4 Gebhardt, Kathlen (LA)			

Uns die Rückmeldung nicht benötigten Räume für Veranstaltungen wird entsprechend Semesterräume vom 20.06.2022 und 22.11.2022, veröffentlichten per Bundesverleihen des Browsers 9.0/2022 und 10.11/2022 und 02.09.2022 und 08.12.2022, über die E-Mail-Adresse raumplanung@tu-freiberg.de geteilt.



Remarks

- ❖ The first lecture starts on **Monday October 20th, 2025**.
- ❖ Note that possibly the first exercise starts before the first lecture.
- ❖ The beginning of a lecture can be shifted by a few minutes. Contact your lecturer!
- ❖ Most lectures offer material on Opal. It is requested registering on Opal for your courses.
<https://bildungsportal.sachsen.de/opal>
- ❖ Every student has its own account at the University Computer Centre (URZ)
- ❖ Every student has an email address, mostly
`FirstName.SureName@student.tu-freiberg.de`

- ❑ Website for more information on “How to start your study in Freiberg”:
<https://tu-freiberg.de/en/start-of-studies-ws>
- ❑ Literature can be found at the University Library (use your student ID card) or online (Login via your URZ-Account).
- ❑ Lunch and other food is offered by the Mensa (you can use your student ID card for paying).
- ❑ The daily Uni-Circular-Mail UNIINFO-L contains helpful information.

Troubleshooting / FAQs

- ❖ Check out our FAQ-webpage: [MDRS FAQ site](#)
- ❖ Ask fellow students or use [buddy programme](#)
- ❖ Reach out via E-mail: bjoern.sprungk@math.tu-freiberg.de
- ❖ Please read the Exam and Study regulations
- ❖ There is no minimum number of credit points needed to progress to the next semester
- ❖ The 4 semesters are a recommendation how to study MDRS – it is not mandatory to study it within 4 semesters and not uncommon to spend 6 or 8 semesters to obtain all credit points
- ❖ For visa problems, ask the lecturers of the individual courses, whether online participation is possible.

What else?

- ❖ Languages courses like Italian, Spanish, French, German ... are offered by IUZ:
<https://tu-freiberg.de/iuz/sprachen>
- ❖ General education courses offered by „Studium Generale“:
<https://tu-freiberg.de/studium-generale>
- ❖ Sports (registration by URZ account):
<https://www.tubaf.plus>
- ❖ Student initiatives: <https://www.stura.tu-freiberg.de/de/ags-initiativen>

Contact

- ❖ Students council of the faculty: `fsrc1@stura.tu-freiberg.de`

- ❖ Students council of the university:
 - ❖ `info@stura.tu-freiberg.de`
 - ❖ Agricolastraße 10, 09599 Freiberg
 - ❖ +49 3731 39-3447

- ❖ IUZ – International University Centre

<https://tu-freiberg.de/en/iuz>

- ❖ Orientation Days
- ❖ Language courses
- ❖ Exchange programmes

Contact

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