TECHNISCHE UNIVERSITÄT DRESDEN

Prof. Arno Straessner
Studiendekan der Fakultät Physik

Welcome! Herzlich Willkommen!
Fakultät Physik der TU Dresden

Welcome and Introduction to the Master's Programme in Physics

- Introduction to the Master of Science in Physics
- Information on the Study Support Programme
- Information and Support by the Student Council

TU Dresden

- 29.000 Students
- 8.300 Employees
- 600 Professors
- 120 Study Courses

- 17 Departments
- 5 Schools

School of Science

School of Humanities and Social Sciences

School of Engineering Sciences

School of Civil and Environmental Engineering

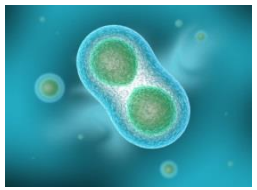
School of Medicine

School of Science
Bereich Mathematik und Naturwissenschaften

Mathematics

Physics

Chemistry



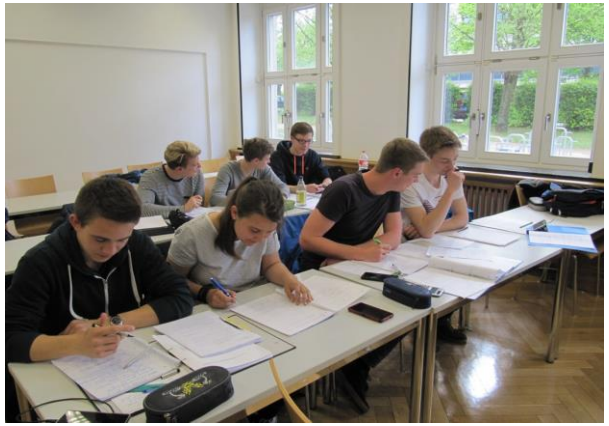
Biology

Psychology

Department of Physics
Fakultät Physik - Recknagelbau

Department of Physics

~ 1000 Students
- 350 Bachelor students
- 200 Master students
- 300 Students in teacher training in physics
- 220 Ph.D. students



~ 50 Lectures per year
~ 10 Seminars per year
~ Laboratory courses

Exzellence cluster
- Complexity and Topology in Quantum Matter
- Physics of Life

Research networks
- DFG - German Science Foundation: Sonderforschungsbereiche, Forschungsgruppen, Schwerpunktprogramme, Graduiertenkollegs
- International Max Planck Research School, International Helmholtz Research School
- Federal Minstry of Education and Research: Forschungsschwerpunkte, Forschungsinfrastrukturen

Institutes at the Department of Physics

Applied Physics

iap

Solid State and Materials Physics

IFMP
Institut für Festkörper- & Materialphysik

Theoretical Physics

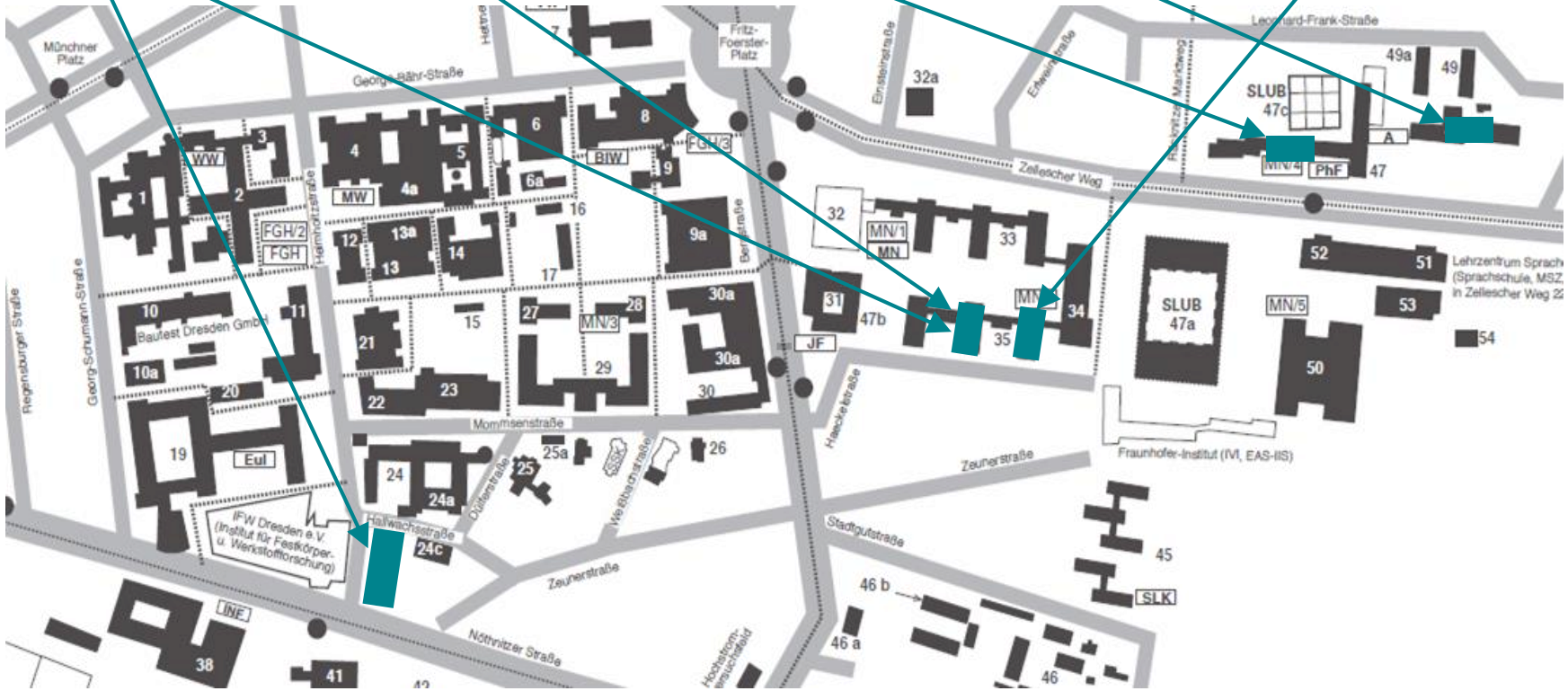
ITP

Nuclear and Particle Physics

INSTITUT FÜR KERN- UND TEILCHENPHYSIK

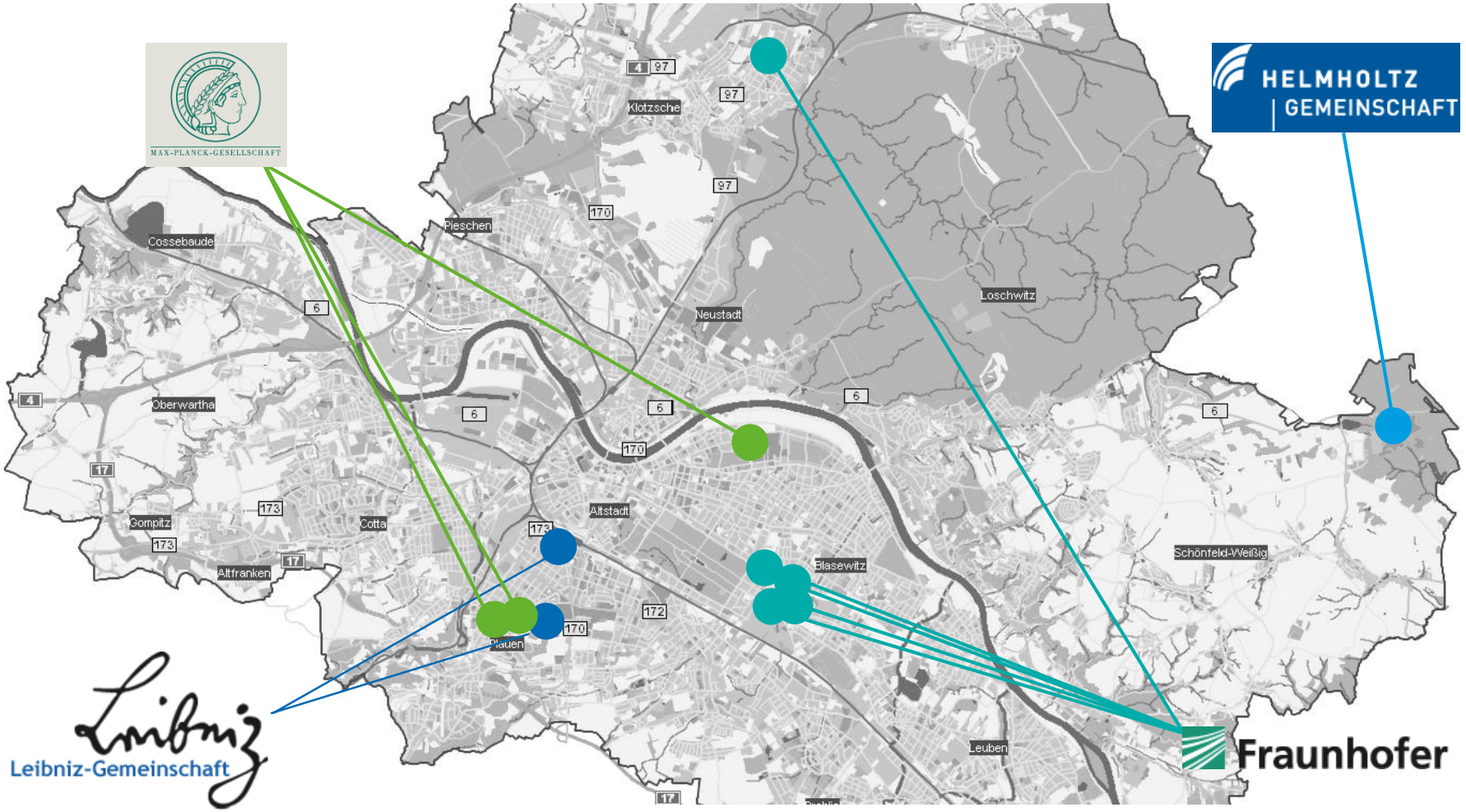
Physics Education

Didaktik der Physik

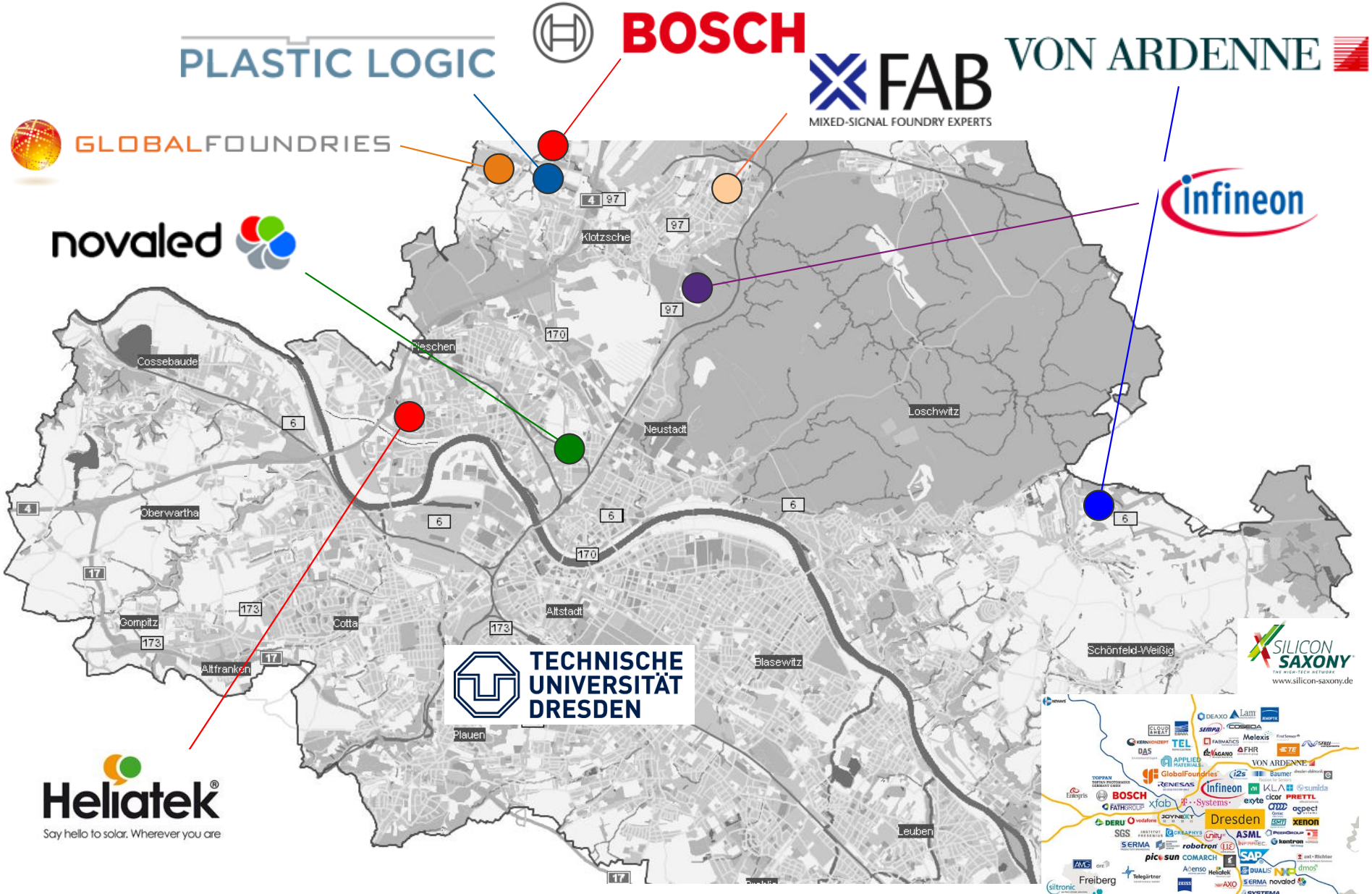


Research Institutions in Dresden

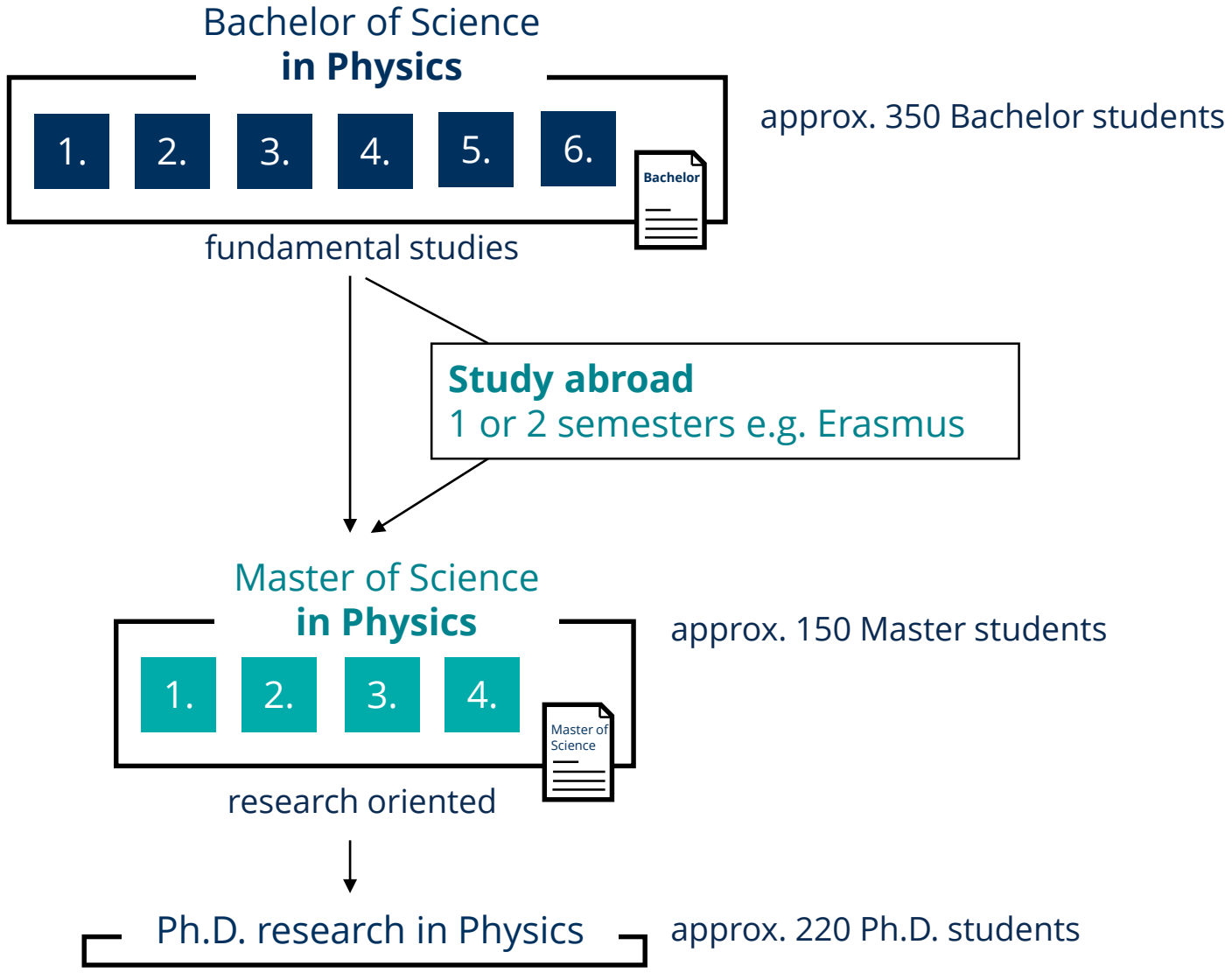
DRESDEN concept



Research Oriented Industry in Dresden



Physics @ TU Dresden



Master of Science in Physics

<table>
<tr><th>Semester</th><th>experimental</th><th>theoretical</th><th>applied</th><th colspan="2">elective courses</th></tr>
<tr><td>1</td><td rowspan="2">Experimental Physics</td><td rowspan="2">Theoretical Physics</td><td rowspan="2">Advanced Scientific Seminar</td><td rowspan="2">Specialisation Physics:
• Applied Solid State Physics and Photonics
• Solid State and Material Physics
• Soft Condensed Matter and Biological Physics
• Particle and Nuclear Physics
• Theoretical Physics</td><td rowspan="2">Non-physics supplementary courses</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td colspan="4">Scientific Studies</td></tr>
<tr><td>4</td><td colspan="4">Master Thesis</td></tr>
</table>

Research Phase Master

Study Plan Start in Summer term

Modul number	Modul name	1st Semester (M)	2nd Semester	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**
					Master Thesis	**30**
Elective Compulsory Field Non-Physics Supplement[1]						
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
CP		**30**	**30**	**30**	**30**	**120**

[1] one module must be chosen

* depending on choice made by the student

M Mobility window according to § 6 para. 1 sentence 4

CP	Credit Points	Ex	Examination(s)	PW	Preliminary academic work	L	Lecture	E	Exercise
T	Tutorial	S	Seminar	P	Practical training	St	Self-study	SW	Scientific work

Study Plan Start in Summer term

Modul number	Modul name	1st Semester (M)	2nd Semester	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**
					Master Thesis	**30**
Elective Compulsory Field Non-Physics Supplement[1]						
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			**13**
CP		**30**	**30**	**30**	**30**	**120**

[1] one module must be chosen

* depending on choice made by the student

M Mobility window according to § 6 para. 1 sentence 4

CP	Credit Points	Ex	Examination(s)	PW	Preliminary academic work	L	Lecture	E	Exercise
T	Tutorial	S	Seminar	P	Practical training	St	Self-study	SW	Scientific work

University: Research and Education
Department of Physics

Research

https://tu-dresden.de/mn/physik/forschung

Teaching

https://tu-dresden.de/mn/physik/studium

- Lectures
- Tutorials
- Seminars
- Lab courses
- Scientific theses
- ...

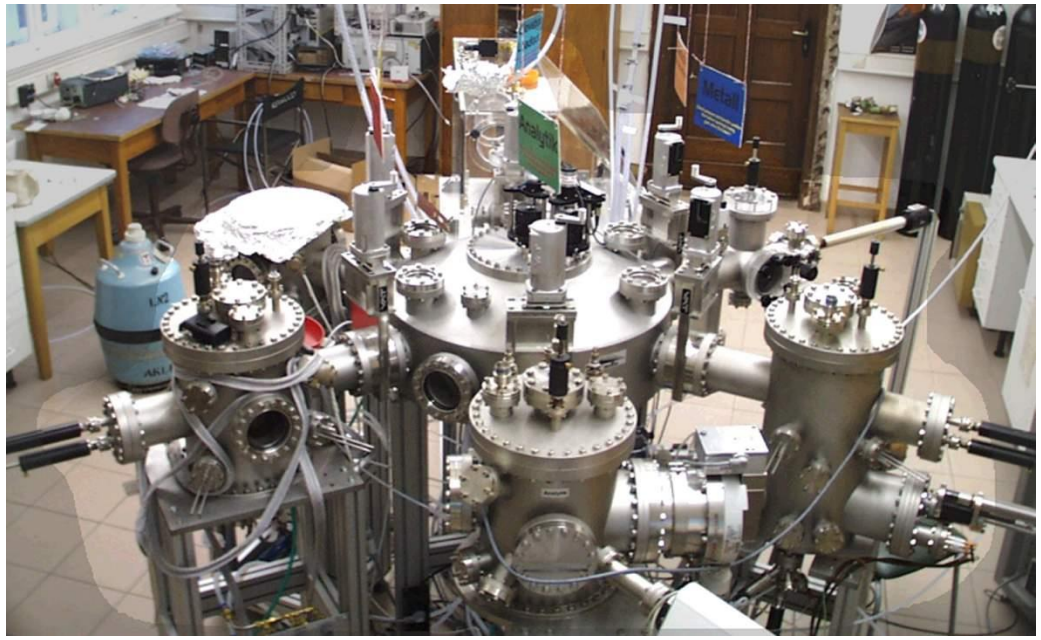
Department / Organisation

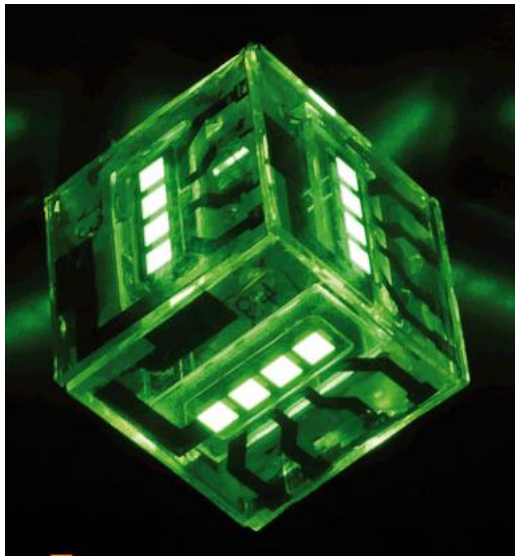
https://tu-dresden.de/mn/physik/die-fakultaet

- Dean (Prof. Pospiech)
- Dean of Studies Bachelor's Physics (Prof. A. Chernikov)
- Dean of Studies Master's Physics (Prof. Straessner)
- Department (Dr. Grafström, Dr. Brose, Fr. Ristau, Fr. Päzold)
- Examination Office
- Student Council Physics https://www.pfsr.de/
- Coordination of Master Programme
  (Dean of Studies, MA: Peter Fischer)
- Academic Advisor (Dr. Dörr)

Specializazion Area: Applied Physics and Photonics

- Organic electronics:
  LEDs, solar cells, transistors, ...
- Nano optics





DEUTSCHER ZUKUNFTSPREIS
Preis des Bundespräsidenten
für Technik und Innovation

Heliatek®
Say hello to solar. Wherever you are

novaled

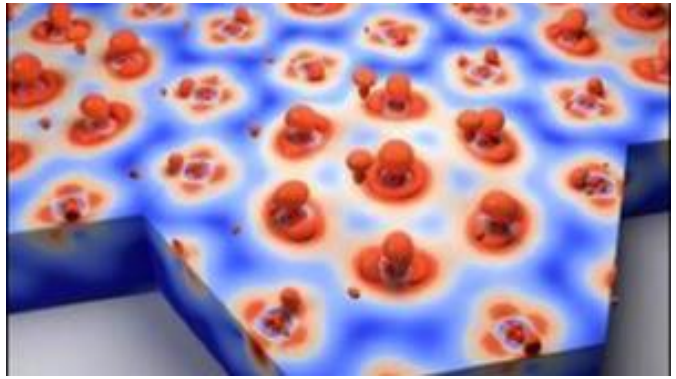
Specialization Area: Solid State Physics and Materials

HZDR
HELMHOLTZ ZENTRUM
DRESDEN ROSSENDORF

Intense magnetic field laboratory Dresden

Materials with exotic properties:

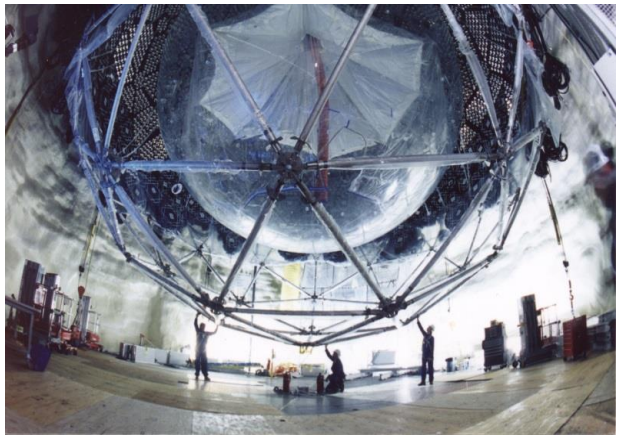
- Superconductors
- Magnetism
- Low-dimensional quantum systems



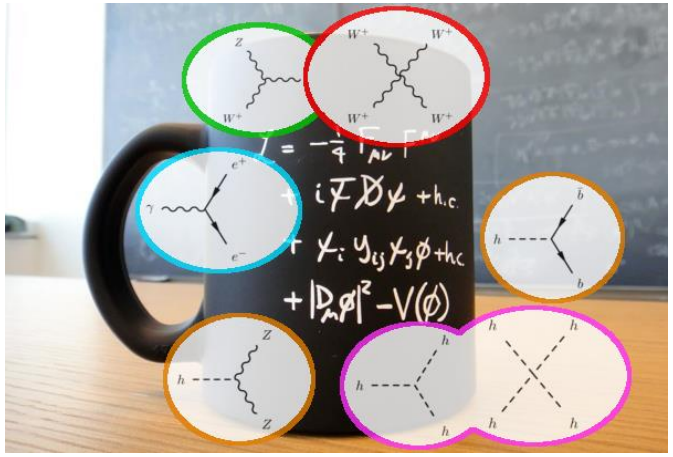
ct.qmat

Specialization Area: Nuclear and Particle Physics

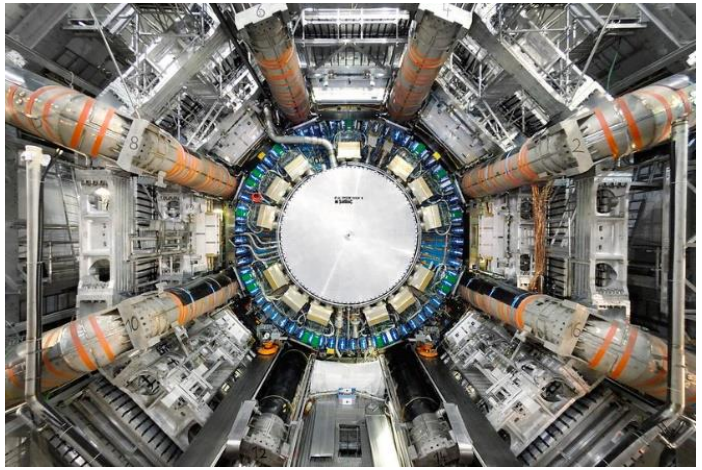
- High energy physics at the LHC:
  - Standard Model physics, Higgs physics, …
- Neutrino physics
- Nuclear astrophysics, astrophysics
- Medical physics and particle beams
- Particle physics theory



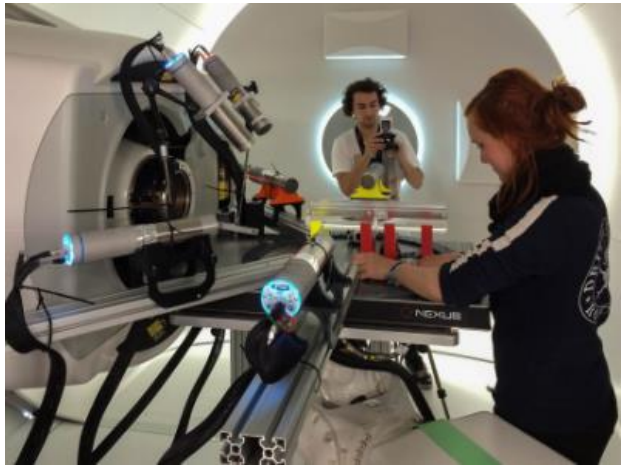
SNO+ Detector in Sudbury



Standard Model of Particle Physics



ATLAS Detector at CERN



Particle Detectors for Medical Physics

Specialization Area: Theoretical Physics

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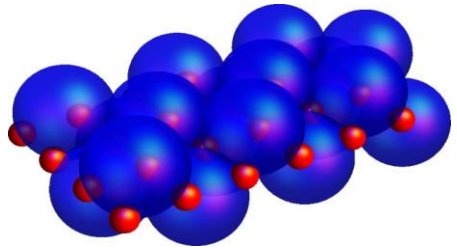
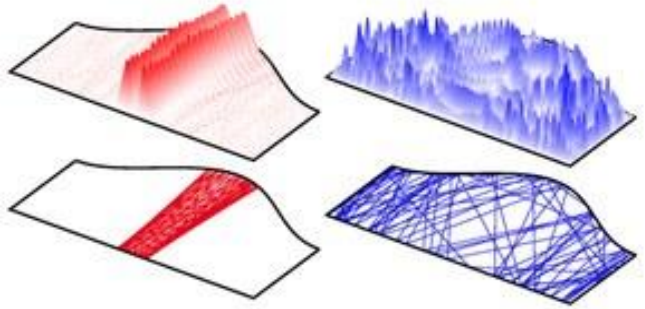


Broad spectrum:

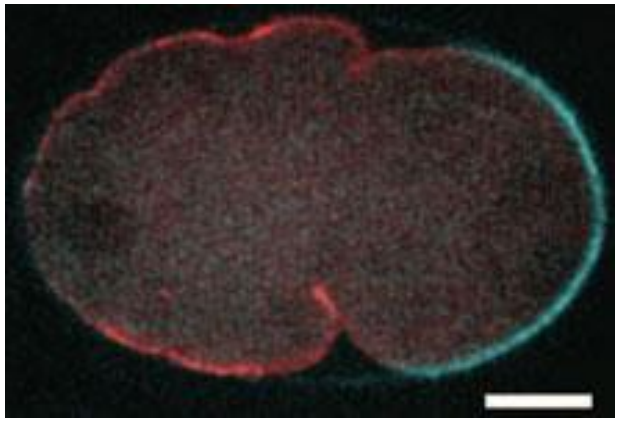
- Solid state and many-body physics
- Quantum optics
- Non-linear dynamics
- Statistical physics
- Elementary particle physics
- Theory of complex networks

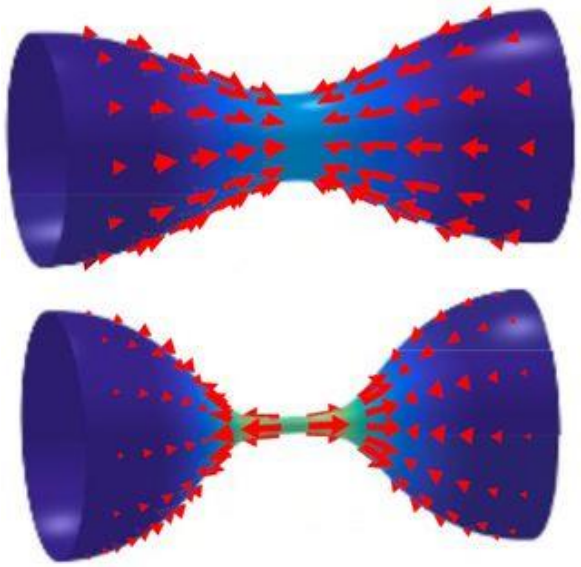
ZIH
Zentrum für Informationsdienste und Hochleistungsrechnen

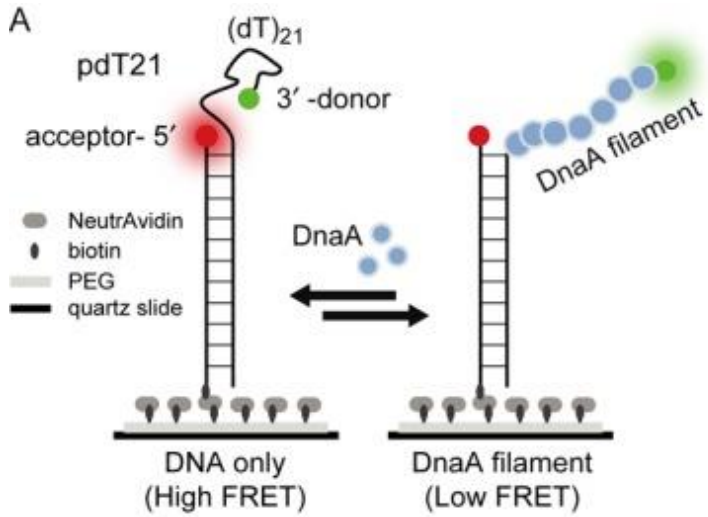


Specialization Area: Biophysics, soft condensed matter physics

- Dynamics of bio molecules
- Mechanics of cells
- Tissue organisation
- Experiment und theory







Quelle: Cheng *et al.*, Nucl. Acids Res. **43**, 396 (2015)

Specialisation Physics

- 5 specialisation areas:
  - Applied Solid State Physics and Photonics
  - Solid State and Material Physics
  - Soft Condensed Matter and Biological Physics
  - Particle and Nuclear Physics
  - Theoretical Physics

- Online catalogue of courses:
  - https://tu-dresden.de/mn/physik/studium/lehrveranstaltungen/vertiefungsgebiete-bachelor-und-master
  - https://selma.tu-dresden.de
- Some courses are valid for more than one specialisation areas

- Naming scheme:
  - **W:** course for Master and Bachelor students
  - **Wm:** course preferentially for Master students
  - **F:** optional course, cannot be selected for examination

- The courses define the possible topics of the oral exam in the specialisation area: 2 topics need to be selected for the exam
- The language of all oral exams can be English or German

Specialisation Physics

Example

Username | Password | LOGIN

› Forgot password

- Welcome
- Application
- Forgot Password
- List of Lectures
  - SuSe 2024
  - WiSe 2023/24
  - Archive
  - Search

List of Lectures

Overview 〉 School of Science 〉 Faculty of Physics 〉 Specialisation Physics Bachelor and Master 〉 **solid state and materials physics**

Module / Course offering Module Owner / Instructors Time period	Event type
› K0200-V2WFx2hV Molecular Nanostructures (L) Prof. Dr. rer. nat. habil. Bernd Büchner Mon, 8. Apr. 2024 [09:20] - Mon, 15. Jul. 2024 [10:50]	Lecture
› K0200-V2WMx2gV Magnetism II (L) Prof. Dr. rer. nat. Dmytro Inosov Tue, 9. Apr. 2024 [13:00] - Tue, 16. Jul. 2024 [14:30]	Lecture
› K0200-V2Wxx2aV Superconductivity 1 (L) Prof. Dr. rer. nat. Joachim Wosnitza Wed, 10. Apr. 2024 [14:50] - Wed, 17. Jul. 2024 [16:20]	Lecture

W = this lecture topic can be selected for the oral exam

Specialisation Physics

- 5 specialisation areas:
  - Applied Solid State Physics and Photonics
  - Solid State and Material Physics
  - Soft Condensed Matter and Biological Physics
  - Particle and Nuclear Physics
  - Theoretical Physics

- Master and Bachelor studies are independent

- You may select specialization topics in the (oral) Master examinations which you already had selected as specialization in your Bachelor studies

- However, the examination results of the Bachelor course cannot be recognized as examination results of the Master

- You can take courses from more than one specialization - only at the time of inscription for the oral Master exam you select "your" specialisation

Specialisation Physics

- The examination prerequisite is a "portfolio of written problem solutions" which is comprised of
  - Applied Solid State Physics and Photonics:
    - laboratory practical reports
  - Solid State and Material Physics:
    - laboratory practical reports
  - Soft Condensed Matter and Biological Physics
    - computer or laboratory practical reports
  - Particle and Nuclear Physics
    - reports from a mix of lab and QFT practical work
  - Theoretical Physics
    - written problem solutions completed in each of (at least) three courses, e.g. as part of the tutorials

Study Plan Advanced Scientific Seminar

Modul number	Modul name	1st Semester (M) L/E/T/S/P/St/SW	2nd Semester L/E/T/S/P/St/SW	3rd Semester L/E/T/S/P/St/SW	4th Semester L/E/T/S/P/St/SW	CP
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**

- Advanced scientific seminars are offered by the physics institutes of the department
- Seminar can be taken in Winter and Summer term
- Seminar topics are announced each semester in the course catalog

Study Plan Advanced Scientific Seminar - Selma View

Overview 〉 School of Science 〉 Faculty of Physics 〉 **Master Physics Advanced Scientific Seminars**

Module / Course offering Module Owner / Instructors Time period	Event type
› K0200-XHSMaPhS PHY Main Seminar: Contemporary Issues of Mathematical Physics (S) Prof. Dr. rer. nat. habil. Arnd Bäcker; Prof. Dr. rer. nat. Ralph Chill; Dr. rer. nat. habil. Anke Kalauch; Prof. Dr. rer. nat. Walter Strunz Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Additional Events
› M0200-M0Hse Advanced seminar Physics N.N.	SoSe 2025
K0200-M0Hse1S Wissenschaftliches Hauptseminar – Angewandte Festkörperphysik und Photonik (S)	
› K0200-M0Hse1S Advanced seminar Physics – Applied Solid-State Physics and Photonics (S) Prof. Dr. rer. nat. Alexey Chernikov; Prof. Dr. phil. Lukas Eng; Prof. Dr. rer. nat. habil. Karl Leo; Prof. Dr. rer. nat. Sebastian Reineke Wed, 9. Apr. 2025 [11:10] - Wed, 16. Jul. 2025 [12:40]	Seminar
K0200-M0Hse2S Wissenschaftliches Hauptseminar – Festkörper- und Materialphysik (S)	
› K0200-M0Hse2S Advanced seminar Physics – Solid State and Materials Physics (S) Elena Gati; Prof. Dr. rer. nat. Hans-Henning Klauß Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Seminar
K0200-M0Hse4S Wissenschaftliches Hauptseminar – Teilchen- und Kernphysik (S)	
› K0200-M0Hse4S Advanced seminar Physics – Particle and Nuclear Physics (S) Prof. Dr. rer. nat. Arno Straessner Th, 10. Apr. 2025 [11:10] - Th, 17. Jul. 2025 [12:40]	Seminar
K0200-M0Hse5S Wissenschaftliches Hauptseminar – Theoretische Physik (S)	
› K0200-M0Hse5S Advanced seminar Physics – Theoretical Physics (S) Ph.D. Masudul Haque Fri, 11. Apr. 2025 [13:00] - Fri, 18. Jul. 2025 [14:30]	Seminar

Study Plan Advanced Scientific Seminar - Detailed information

Course Details

K0200-M0HsexS Advanced seminar Physics (S)

Instructors:	Prof. Dr. rer. nat. Alexey Chernikov; Prof. Dr. phil. Lukas Eng; Prof. Dr. rer. nat. Manfred Helm; Prof. Dr. rer. nat. habil. Karl Leo; Prof. Dr. rer. nat. Sebastian Reineke
Event type:	Seminar
Org-unit:	Faculty of Physics
Hours per week:	2
Language of instruction:	German/English
Alternativtitel:	all infos in OPAL https://bildungsportal.sachsen.de/opal/auth/RepositoryEntry/23113826376?14
OPAL-Kurs:	https://bildungsportal.sachsen.de/opal/auth/RepositoryEntry/23113826376?14

Example

- Recommendation: go to the first seminar session to hear about the seminar organization!

Appointments

	Date	From	To	Room	Instructors
1	Wed, 10. Apr. 2024	11:10	12:40		Prof. Dr. rer. nat. Alexey Chernikov; Prof. Dr. phil. Lukas Eng; Prof. Dr. rer. nat. Manfred Helm; Prof. Dr. rer. nat. habil. Karl Leo; Prof. Dr. rer. nat. Sebastian Reineke

Example

Study Plan Advanced Scientific Seminar - Selma View

Overview 〉 School of Science 〉 Faculty of Physics 〉 **Master Physics Advanced Scientific Seminars**

Module / Course offering Module Owner / Instructors Time period	Event type
› K0200-XHSMaPhS PHY Main Seminar: Contemporary Issues of Mathematical Physics (S) Prof. Dr. rer. nat. habil. Arnd Bäcker; Prof. Dr. rer. nat. Ralph Chill; Dr. rer. nat. habil. Anke Kalauch; Prof. Dr. rer. nat. Walter Strunz Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Additional Events
› M0200-M0Hse Advanced seminar Physics N.N.	SoSe 2025
K0200-M0Hse1S Wissenschaftliches Hauptseminar – Angewandte Festkörperphysik und Photonik (S)	
› K0200-M0Hse1S Advanced seminar Physics – Applied Solid-State Physics and Photonics (S) Prof. Dr. rer. nat. Alexey Chernikov; Prof. Dr. phil. Lukas Eng; Prof. Dr. rer. nat. habil. Karl Leo; Prof. Dr. rer. nat. Sebastian Reineke Wed, 9. Apr. 2025 [11:10] - Wed, 16. Jul. 2025 [12:40]	Seminar
K0200-M0Hse2S Wissenschaftliches Hauptseminar – Festkörper- und Materialphysik (S)	
› K0200-M0Hse2S Advanced seminar Physics – Solid State and Materials Physics (S) Elena Gati; Prof. Dr. rer. nat. Hans-Henning Klauß Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Seminar
K0200-M0Hse4S Wissenschaftliches Hauptseminar – Teilchen- und Kernphysik (S)	
› K0200-M0Hse4S Advanced seminar Physics – Particle and Nuclear Physics (S) Prof. Dr. rer. nat. Arno Straessner Th, 10. Apr. 2025 [11:10] - Th, 17. Jul. 2025 [12:40]	Seminar
K0200-M0Hse5S Wissenschaftliches Hauptseminar – Theoretische Physik (S)	
› K0200-M0Hse5S Advanced seminar Physics – Theoretical Physics (S) Ph.D. Masudul Haque Fri, 11. Apr. 2025 [13:00] - Fri, 18. Jul. 2025 [14:30]	Seminar

register

Study Plan Advanced Scientific Seminar - Selma View - **Registration**

Overview 〉 School of Science 〉 Faculty of Physics 〉 **Master Physics Advanced Scientific Seminars**

Module / Course offering Module Owner / Instructors Time period	Event type	
› K0200-XHSMaPhS PHY Main Seminar: Contemporary Issues of Mathematical Physics (S) Prof. Dr. rer. nat. habil. Arnd Bäcker; Prof. Dr. rer. nat. Ralph Chill; Dr. rer. nat. habil. Anke Kalauch; Prof. Dr. rer. nat. Walter Strunz Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Additional Events	
› M0200-M0Hse Advanced seminar Physics N.N.	SoSe 2025	deregister
K0200-M0Hse1S Wissenschaftliches Hauptseminar – Angewandte Festkörperphysik und Photonik (S)		
› K0200-M0Hse1S Advanced seminar Physics – Applied Solid-State Physics and Photonics (S) Prof. Dr. rer. nat. Alexey Chernikov; Prof. Dr. phil. Lukas Eng; Prof. Dr. rer. nat. habil. Karl Leo; Prof. Dr. rer. nat. Sebastian Reineke Wed, 9. Apr. 2025 [11:10] - Wed, 16. Jul. 2025 [12:40]	Seminar	register
K0200-M0Hse2S Wissenschaftliches Hauptseminar – Festkörper- und Materialphysik (S)		
› K0200-M0Hse2S Advanced seminar Physics – Solid State and Materials Physics (S) Elena Gati; Prof. Dr. rer. nat. Hans-Henning Klauß Th, 10. Apr. 2025 [09:20] - Th, 17. Jul. 2025 [10:50]	Seminar	register
K0200-M0Hse4S Wissenschaftliches Hauptseminar – Teilchen- und Kernphysik (S)		
› K0200-M0Hse4S Advanced seminar Physics – Particle and Nuclear Physics (S) Prof. Dr. rer. nat. Arno Straessner Th, 10. Apr. 2025 [11:10] - Th, 17. Jul. 2025 [12:40]	Seminar	register
K0200-M0Hse5S Wissenschaftliches Hauptseminar – Theoretische Physik (S)		
› K0200-M0Hse5S Advanced seminar Physics – Theoretical Physics (S) Ph.D. Masudul Haque Fri, 11. Apr. 2025 [13:00] - Fri, 18. Jul. 2025 [14:30]	Seminar	register

Study Plan Advanced Scientific Seminar - Selma View - **Menu**

1. Login / Logout
2. Selma Logo
3. Your name
4. Navigation

https://tu-dresden.de/mn/studium/selma/index

Modules
Register/Deregister

- **first register for the module**
- then you can register for the lectures/seminars/exercises/... **and** for the exams

Examinations
Register/Deregister

- may only be active during examination registration period;
- some examinations can only be registered for at the examination office
- in case of doubts: studienbuero.mn@tu-dresden.de

Study Plan Experimental and Theoretical Physics

Modul number	Modul name	1st Semester (M)	2nd Semester	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**

- Experimental and Theoretical Physics:
  - Winter term: lectures and tutorials
  - Summer term: tutorials and self-studies

- Oral examination can be taken in every term
- Module examinations taken prior to the semesters specified in the study schedule allow for a "free attempt":
  - Upon request, module examinations or examined assessments graded at least “pass” (4.0) in the free attempt may be repeated once the next time the examination is regularly held in order to improve the grade. In this case, the better assessment counts.

Study Plan Experimental and Theoretical Physics

Modul number	Modul name	1st Semester (M) L/E/T/S/P/St/SW	2nd Semester L/E/T/S/P/St/SW	3rd Semester L/E/T/S/P/St/SW	4th Semester L/E/T/S/P/St/SW	CP
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**

- Experimental Physics:
  - key concepts of experimental physics
  - common strategies in the experimental investigation of structures and excitations of physical systems at different scales of size and energy
  - correlate physical concepts and methods of different experimental fields

- Theoretical Physics:
  - overview of the fields of theoretical physics and their interrelations
  - describe theoretical descriptions of selected physical phenomena in a comprehensible way
  - combine theoretical fundamentals and methods
  - independently explore complex physics questions

Study Plan Non-physics Supplement

Elective Compulsory Field Non-Physics Supplement[1]			
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*

Mathematics
Biomathematics
Chemistry
Biology
Molecular Biology
Computer Science
Philosophy
Electrical Engineering
Mechanical Engineering
Materials Science
Economics
Business Administration

- Elective Compulsory Non-Physics Supplement:
  - 25 topics in 12 non-physics areas
  - typically 8 SWS (double periods of lecture/tutorial/seminar/lab) and 13 credit points

  - The module exam consists of 2 or 3 course assessments
  - The module grade will be calculated from the individual grade of each examination weighted 1:1(:1)
  - All oral exams are conducted in German or English, at the student's discretion.
  - All written examinations take place in the language of instruction.
  - If a module grade yields "not passed", instead of repeating the exam, also another topic and/or another minor can be chosen.

Study Plan Non-physics Supplement

Elective Compulsory Field Non-Physics Supplement[1]						
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13

- Elective Compulsory Non-Physics Supplement:
  - Catalogue and further information:
  - https://tu-dresden.de/mn/physik/studium/master/lehrveranstaltungen/nichtphysikalische_ergaenzung_master?set_language=de

Study Plan Non-physics Supplement - The Selma View

List of Lectures

Overview 〉 School of Science 〉 Faculty of Physics 〉 **Master Wahlpflichtbereich - Nichtphysikalische Ergänzung**

Module / Course offering Module Owner / Instructors Time period	Event type	Start semester
› M0200-M0MAT Non-Physics Supplementary Course Mathematics N.N.		SoSe 2024
K0108-22222xV Analysis - Funktionentheorie (V)		
› K0108-22222xV Analysis - Complex Analysis (L) Prof. Dr. rer. nat. Ralph Chill Tue, 9. Apr. 2024 [09:20] - Fri, 19. Jul. 2024 [10:50]	Lecture	
K0108-22222xÜ Analysis - Funktionentheorie (Ü)		
› K0108-22222xÜ Analysis - Complex Analysis (E) Prof. Dr. rer. nat. Ralph Chill Tue, 16. Apr. 2024 [09:20] - Tue, 9. Jul. 2024 [10:50]	Exercise	
K0108-22522xV Numerische Mathematik - Iterationsverfahren (V)		
› K0108-22522xV Numerical Mathematics - Iterative Methods (L) Prof. Dr. rer. nat. habil. Andreas Fischer Mon, 8. Apr. 2024 [14:50] - Fri, 19. Jul. 2024 [12:40]	Lecture	

Example

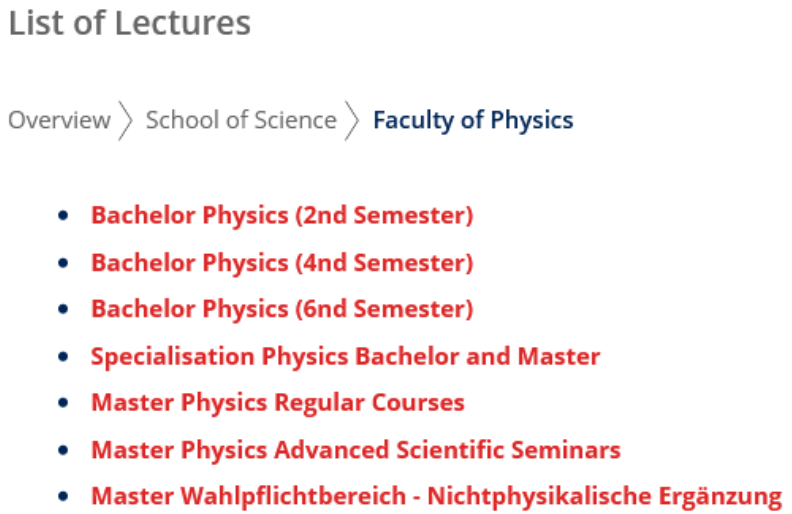
Study Plan Scientific Studies and Master Thesis

Modul number	Modul name	1st Semester (M)	2nd Semester	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			**15**
Phy-Ma-Hsem	Advanced Scientific Seminar	0/0/0/2/0/1/0 1xEx				**6**
Phy-Ma-Exp	Experimental Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-Theo	Theoretical Physics	0/0/1/0/0/3/0	3/1/0/0/0/0/0 1xEx			**13**
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		**30**
					Master Thesis	**30**

- Scientific Studies and Master Thesis:
  - research oriented project, usually in the field of the specialization area
  - oral presentation at the end of the scientific studies
  - The module Scientific Studies is the introduction and preparation to the research project of the Master thesis.
  - The Scientific Studies and the Master thesis deal with a common, overarching research topic.

Master of Science in Physics

- Please, use these web pages for further information, study documents, catalogues and more:
  - https://tu-dresden.de/mn/physik/studium/master
- If you find inconsistencies or unclear information, please, contact me.
- In the annotated course catalogue:
  - https://selma.tu-dresden.de
    - inscription to seminars, tutorial groups, .. for organization
    - course material,
    - links to OPAL pages for additional information or more detailed course organization (seminar topic selection, ...)



- Inscription to examinations must be done through the Selma web pages

Master of Science in Physics Examiniations and Preparation

- Not graded:
  - Advanced scientific seminar (can be taken in any term)
  - Lab and computer courses as part of the "examination prerequisite" in the physics specilisation
  - Oral presentation of the Scientific Studies

- 3 oral exams, can be taken in any term, but typically at the end of the 2nd term:
  - experimental and theoretical physics
  - physics specialisation

- Preparation:
  - lectures, tutorials, self-study
  - **recommendation: preparation for oral exams is best done in learning groups / teams!**

- No formal inscription to lectures needed

- Specialisation area is selected only at the time of inscription to the corresponding oral exam

Master of Science in Physics Credit Points and Grades

- Credit points and grading weights are independent

- Weights for the final grade:

  - 35% Master's thesis (30 CP)
  - 26% Physics Specialization (15 CP)
  - 13% Experimental Physics (13 CP)
  - 13% Theoretical Physics (13 CP)
  - 13% Elective compulsory module of the non-physics supplement (13 CP)

- Specialisation : Experimtal Ph.: Theoretical Ph. : Non-physics suppl.= 2:1:1:1
- Specialisation + Master thesis = 61%
- "key concept" lectures (exp. + theor.) = 26%

Master of Science in Physics Study abroad

- Courses taken abroad can be integrated in the specialisation area (can also be one of the 2 topics in the oral exam)
- At foreign Universities you do not need to take graded examinations (oral exams in Dresden)

- 2 semesters abroad:
  - better integration at foreign University
  - more easy organisation in case of full-year exchange studies (sometimes obligatory in ERASMUS programme)

- 1 semester abroad:
  - summer term is recommended

- experimental and theoretical physics courses may be completed within 1 semester

- More information: https://tu-dresden.de/mn/physik/studium/beratung-und-service/internationales

Study abroad

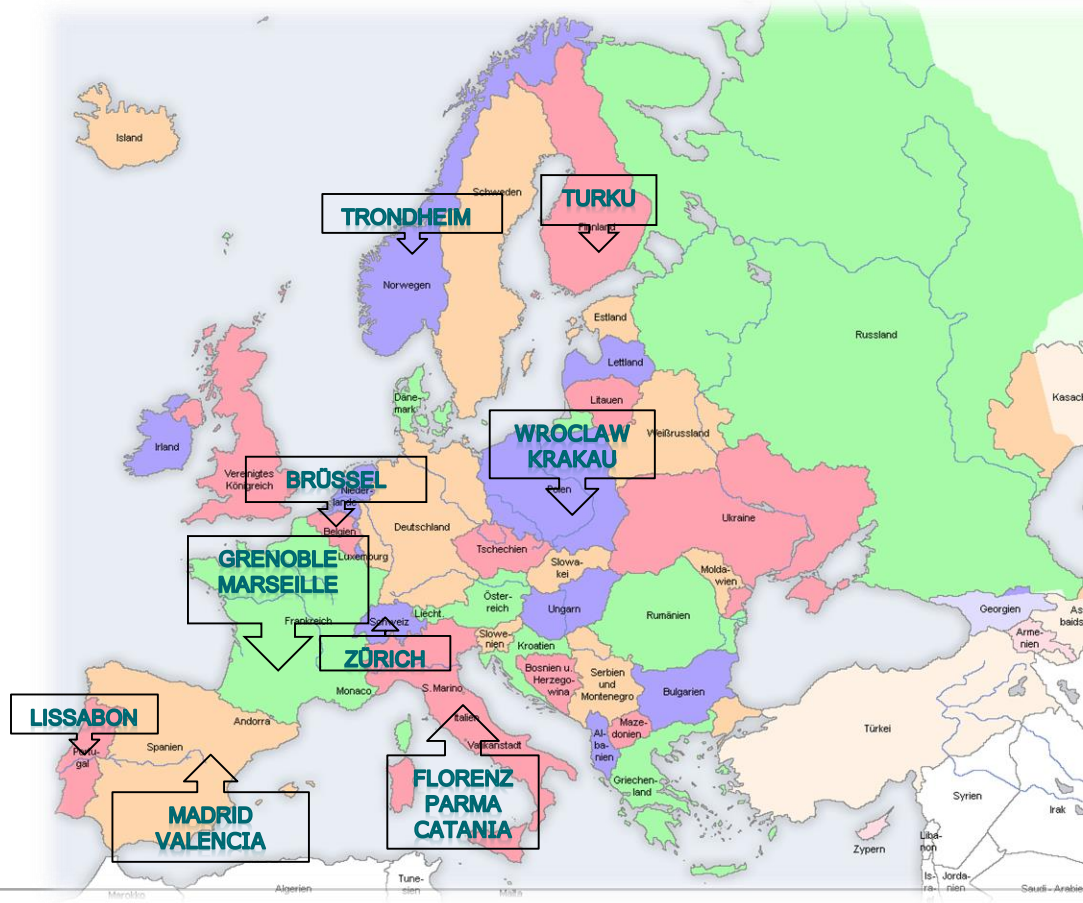
- e.g. Erasmus+: partner Universities in Belgium, Finnland, France, Italy, Norway, Poland, Portugal, Spain, Switzerland

- Check Erasmus information pages of the Physics Faculty: https://tu-dresden.de/mn/physik/studium/beratung-und-service/internationales/erasmus

- Further contacts:
- **Erasmus Coordinator** (Europe)
  - Prof. W. Strunz, ERASMUS.Physik@tu-dresden.de
- **International Officer Physics** (weltweit, insb. nicht-EU)
  - Prof. J. Budich, iop@tu-dresden.de

  or at the International Office TU Dresden

- Internships abroad: Leonardo Office Sachsen www.leo.tu-dresden.de



Support for you!

- Student council PFSR: https://www.pfsr.de/
- **Learning room Physics (Mon-Thu, 6+7. DS, REC/D16)**
- Academic Advisor - Physics Master: Dr. M. Dörr
- Examination Office
- Coordination of the Physics Master studies:
  contact: Peter Fischer, Prof. Arno Straessner

LERNRAUM PHYSIK

Welcome and Introduction to the Master of Science in Physics Programme

- Introduction to the Master of Science in Physics Programme
- Service and Support by TU Dresden
- TUDIAS Language Programme
- Information and Support by the Student Council

TECHNISCHE UNIVERSITÄT DRESDEN

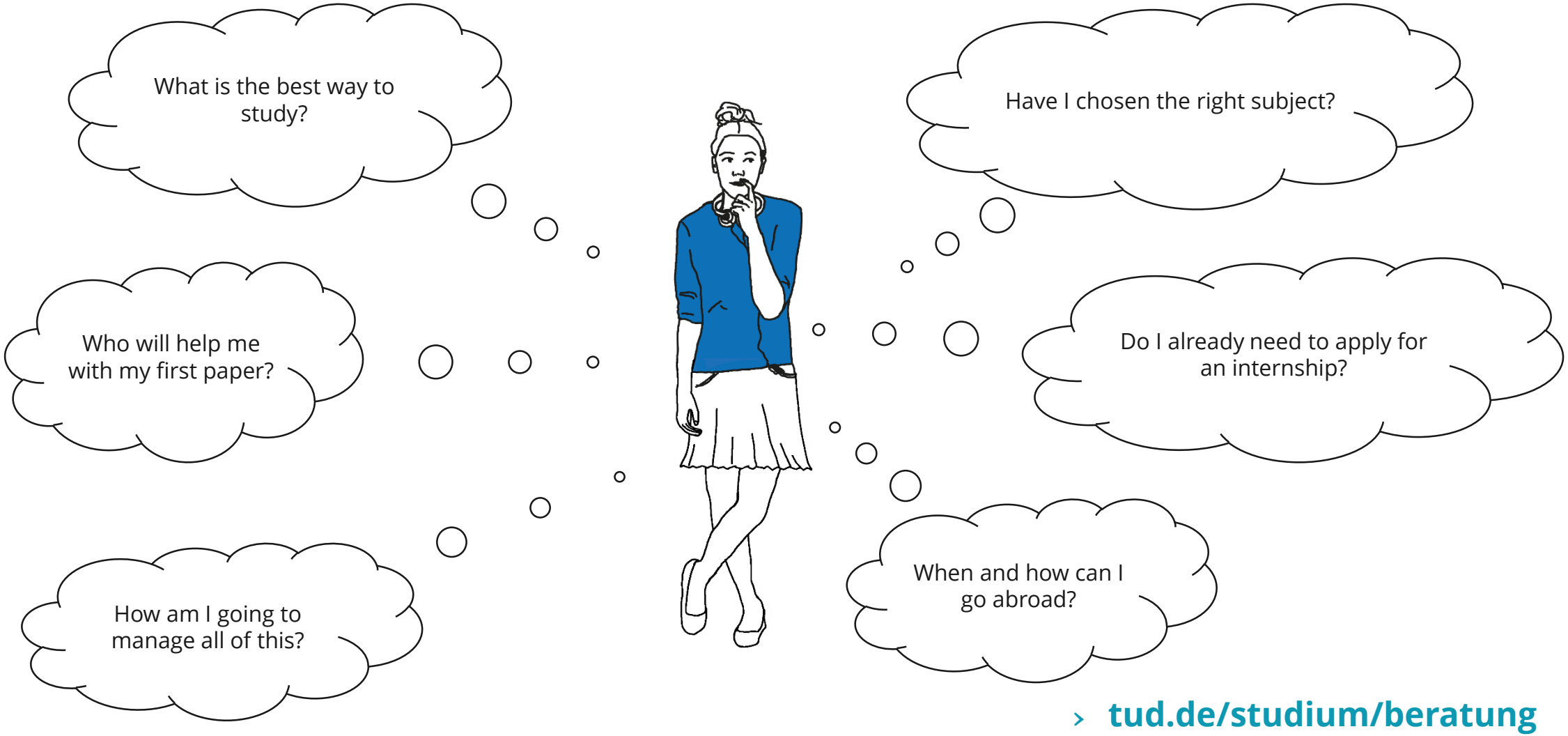
DRESDEN concept

Directorate 8 – Student Affairs and Continuing Education

Services and Support Offers During Your Studies

Student Orientation WS 2024/2025

Do you have questions about studying?



› **tud.de/studium/beratung**

Dresden University of Technology accompanies and supports you

CENTRAL STUDENT INFORMATION AND COUNSELING SERVICE
… is there for you in difficult situations. Having doubts or facing problems during your studies?

› tud.de/zsb/studienberatung

Offers

- Individual Counseling
- Workshops
- Study Groups
- Early Warning System PASST?!

Dresden University of Technology accompanies and supports you

ADMISSIONS OFFICE
… if you were educated in Germany

› tud.de/imma

INTERNATIONAL OFFICE
… for international students

› tud.de/international

Topics

- Re-registration for the following semester, De-registration, Certificates
- Taking a leave of absence
- Changing degree programs

Dresden University of Technology accompanies and supports you

Gaining international experience

International Office

Incoming
- International Tutoring Program
- Cultural Office

Outgoing
- Study abroad

› tud.de/international

LEONARDO-BÜRO SACHSEN

- Internship abroad

› tud.de/leonardo

Dresden University of Technology accompanies and supports you

CAREER SERVICE

Topics & Offers

- Key Competencies
- Presenting skillfully
- Applying successfully
- CV Check
- Career Counseling
- Live Streams with employers
- Jobs and Internships
- On-Campus Jobfairs
- Career Orientation

› tud.de/career

Dresden University of Technology and its partners will accompany and support you with numerous other offers:

Study Success Projects
↗ tud.de/deinstudienerfolg

Studentenwerk Dresden
↗ studentenwerk-dresden.de

Student Council
↗ tud.de/stura
↗ tud.de/stura/fachschaften

Counseling Compass
↗ tud.de/studium/beratungskompass

Student Advisory Service
↗ tud.de/studienfachberatung

We are here to help!

= scs@tu-dresden.de
& +49 351 463 42000
› tud.de/studium/beratung

SCS Service Center Studium
hilft Dir weiter.

Welcome and Introduction to the Master of Science in Physics Programme

- Introduction to the Master of Science in Physics Programme
- Service and Support by TU Dresden
- TUDIAS Language Programme
- Information and Support by the Student Council

TU Dresden Foreign Language Courses

TUDIAS
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TECHNISCHE UNIVERSITÄT DRESDEN

Languages on offer

Ancient Greek	Arabic	Chinese	German
English	Finnish	French	Italian
Japanese	Latin	Polish	Portuguese
Russian	Swedish	Spanish	Czech

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TECHNISCHE UNIVERSITÄT DRESDEN

Participation in a Language Course

- **Credit points for the course** (with passed exam):

  modules (see your examination regulations)

  or

  as additional or elective coursework (see your examination or AQUA regulations)

- In preparation for a **semester abroad**

  (Contact the International Office, Erasmus Coordinator)

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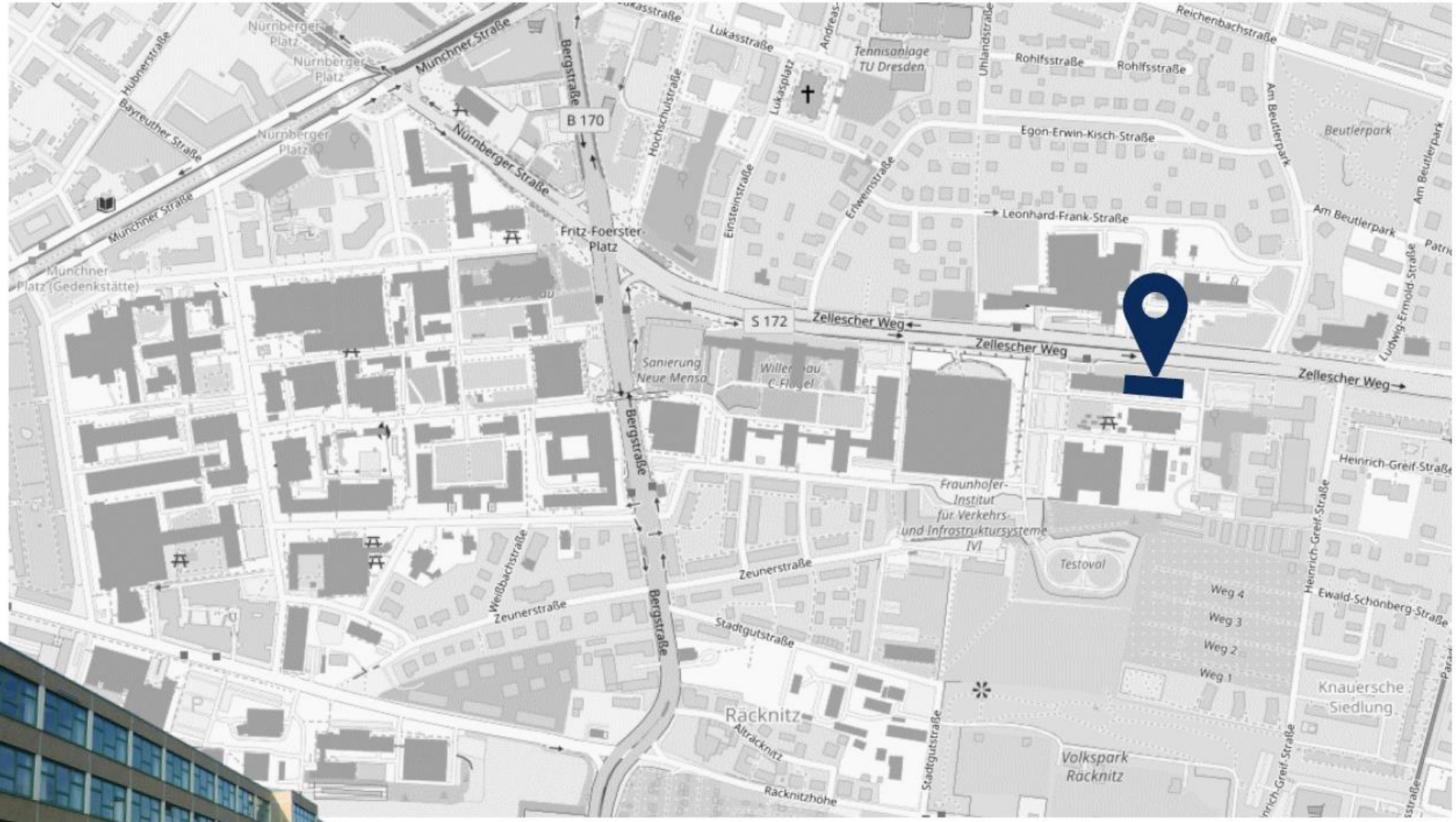
Location



Seminargebäude 1, Zellescher Weg 22

Levels and Course Types

Courses	
A1 – A2+	Without prior knowledge or based on little prior knowledge
B1 – B2	Building on the elementary use of language
B2+ - C1	Academic / Professional Language Competencies
B1 – C1+ Profile courses	Profile courses – Specialized topics

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TECHNISCHE UNIVERSITÄT DRESDEN

Specialization Studies

Ostasienzentrum (OAZ)

- Eastern Asia | Japan
- Eastern Asia | Greater China

Each contains:
12 SWS of language training
8 SWS regional studies (e.g. politics)

Regional Studies: Latin America

- Latin America |Hispanic America
- Latin America |Brasil

B2 Portuguese or C1 Spanish +
regional studies (e.g. politics)

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TECHNISCHE UNIVERSITÄT DRESDEN

Registration

Registration always with **OPAL** starting in April/October

bildungsportal.sachsen.de/opal

TUDIAS
BILDUNG . SPRACHE . GEMEINSCHAFT

Exams

Exam dates published in the course description in
OPAL

Registration for exams via **Selma**
In WiSe in weeks 2-3 (January)
In SoSe in weeks 25-27 (June/July)

Certificates

Participation Certificates
UNIcert Basis, I, II, III
TU-Zertifikat B2+ or C1
APE / ABE Certificate or Diploma
Latin / Ancient Greek knowledge
Preparation for Latinum / Graecum exams

TUDIAS

TECHNISCHE UNIVERSITÄT DRESDEN

TU-Zertifikat
TU-Certificate

«Sprache» Niveau B2+
«Language» Level B2+

Einführung in die Berufs- und Wissenschaftssprache
Introduction into Business «Language» and «Language» for Specific Purposes

«mw»	**«Vorname» «Name»**
Geburtsdatum *Date of Birth*	«GebDatum»
Geburtsort *Place of Birth*	«GebOrt»
Kursinhalt *Topics*	- Arbeit mit fach- und wissenschaftsbezogenen Texten / *Scientific Reading and Writing* - mündliche und schriftliche Kommunikation / *Oral and Written Communication* - Bewerbungstraining / *Job Application Training*
Umfang *Workload*	6 SWS (90 Std.)

Schriftlich / *Written*	Note / *Grade*	Mündlich / *Oral*	Note / *Grade*
Klausur (Lesen+Hören) *Exam (Listening+Reading)*	«KLH»	Mündliche Prüfung *Oral Production*	«mPr»
Klausur (Schreiben) *Exam (Writing)*	«Schr»	Referat *Presentation*	«Ref»

Gesamtnote *Total Result* **«EndNote» («Prädikat»)**

Dresden, 31.03.2023

sprachenverantw. / course instructor

Certificate

Advanced Professional English

«Vorname» «Mittelname» «Name»
«GebDatum»
«GebOrt»

«GESStd» h («GESSWS» SWS)

Grade «Note1»
Grade «Note2»
Grade «Note3»

Examination Board

Framework of Reference for Languages (CEFR) comprises levels and C1 and C2 (user active speaker).

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BILDUNG . SPRACHE . GEMEINSCHAFT

TECHNISCHE UNIVERSITÄT DRESDEN

Contact

TUDIAS Studienorganisation

sprachen.zentrum@tu-dresden.de

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TECHNISCHE UNIVERSITÄT DRESDEN

sprachausbildung.tu-dresden.de

We wish you successful Physics Master studies at TU Dresden!

— Slides will be uploaded to: https://tu-dresden.de/mn/physik/studium/Studienstart

Fachschaftsrat
Physik

April 8th, 2025

Student council of physics

www.pfsr.de

www.pfsr.de

Your #1 contact

If you don‘t know where to go and who to ask - we are here and offer first aid!

pfsr.de
Instagram: @pfsr_tud
Telegram: t.me/pfsrinfo
fsrphysik@mailbox.tu-dresden.de
Office: REC/D017

Everyone can join!

- We meet each Monday at 7 pm (19:00)
- Where? REC/D016
- next meeting will be on April 14th
- More infos: pfsr.de

Our official duties

- Evaluating classes
- Improving the curricula
- Being contact persons for students
- Representing you in several official bodies
  - University student council (StuRa)
  - Comitee for the physics curriculum
  - Examination comissions

Our master guide

www.pfsr.de

Events

First semester introduction

Summer BBQ

Live-Music Evening

Feuerzangenbowle

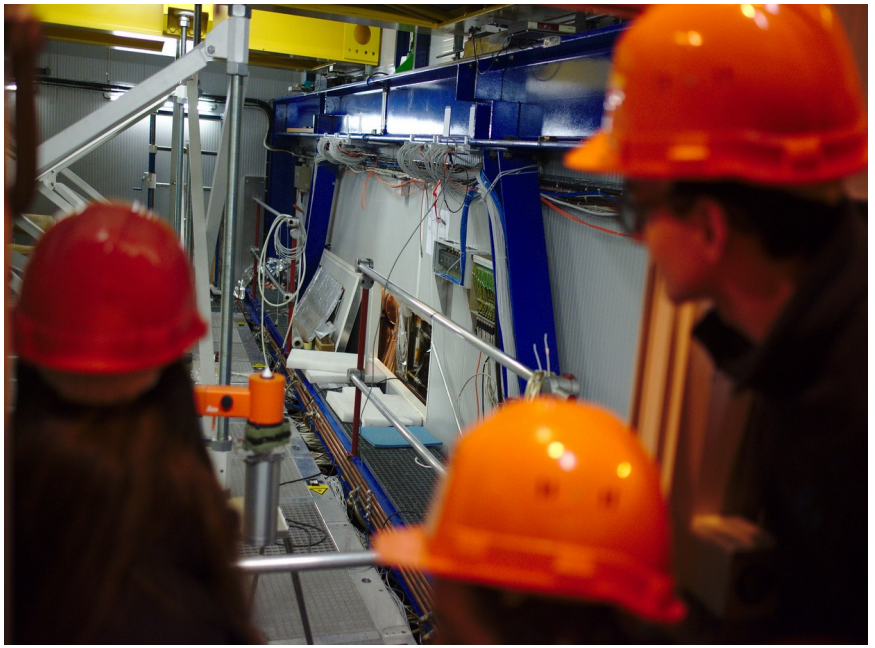
HZDR trip

CERN trip

SPÆM

Feuerzangenbowle

CERN trip



Live-Music evening

Summer BBQ

Our office – REC/D017

Kuschelecke – REC/D108

What‘s next?

Physics Tutorial Room

- Students supporting students
- Get help with you exercice sheets, studying and life in DD
- https://tu-dresden.de/mn/physik/studium/beratung-und-service/lernraum

www.pfsr.de

Private problems or questions in general?

- Problems with lecturers
- Administrative problems
- Question about Disadvantages, ...

⇒ contact us!
stugako-physik-ma@mailbox.tu-dresden.de
(student coordinator of studies)

fsrphysik@mailbox.tu-dresden.de (student council)

General advice

- Check your mails! (msx.tu-dresden.de)
- Organize in study groups
- Register for a library account
- Might need EC card for paying cashless (no credit cards…)
- Sports program (enrolment starts April 9th, TOMORROW)
- Language program (free! Enrolment already started)
- International buddies / Erasmus student network
- Don‘t hesitate to write mails to professors/lecturers
- Don‘t forget to register for main seminar and lab courses

Upcoming events

- **TODAY**: Get-Together, start: 6:30 pm at student club HängeMathe (Zeunerstraße 1f)
- April 14th: next PFSR meeting at 7 pm in REC/D016
- April 23rd : Masters BBQ
  (6 p.m., at the student club HängeMathe)

Our Master Guide

www.pfsr.de

Questions?