



International Master Course Physics



Brandenburgische
Technische Universität
Cottbus - Senftenberg



Faculties

FACULTY 1

Mathematics, Computer
Science, Physics, Electrical
Engineering and Information
Technology

FACULTY 2

Environment and Natural
Sciences

FACULTY 3

Mechanical Engineering,
Electrical and Energy Systems

FACULTY 4

Social Work, Health Care and
Music

FACULTY 5

Business, Law and Social
Sciences

FACULTY 6

Architecture, Civil Engineering
and Urban Planning



Welcome to the Institute of Physics @ BTU!



Prof. H. Schenk
Micro- and Nano Systems
BTU + Fraunhofer IPMS



Prof. G. Seibold
Computational Physics



Prof. I. Flege
Applied Physics and
Semiconductor Spectroscopy



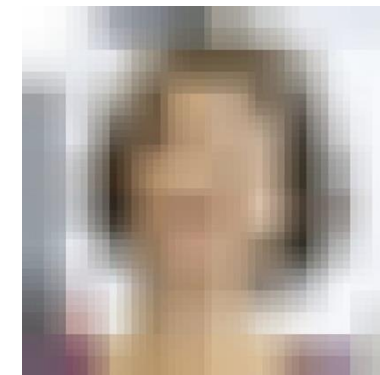
Prof. D. Gorelova
Computational Materials
Modeling



Prof. C. Wenger
Semiconductor Materials
BTU + IHP



Prof. I. Fischer
Experimental Physics and
Functional Materials



N.N.
Nanostructures, 2D-Systems
and Layers

International Master Course Physics: Essential Infos

| <u>Specialization Phase</u> | | Research Phase | |
|--|--|--|------------------------------|
| <i>Semester 1</i> | <i>Semester 2</i> | <i>Semester 3</i> | <i>Semester 4</i> |
| <ul style="list-style-type: none"> • <u>Advanced Seminar</u> (6 LP) • <u>Specialization</u> (18 LP) • Minor <u>Subject</u> (6 LP) | <ul style="list-style-type: none"> • <u>Advanced Seminar</u> (6 LP) • <u>Specialization</u> (12 LP) • Minor <u>Subject</u> (6 LP) • General Studies (6 LP) | <p>Research Project (30 LP)</p> <p><i>(<u>Preparation of the research project for the master thesis</u>)</i></p> | <p>Master Thesis (30 LP)</p> |
| <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> |

International Master Course Physics: Essential Infos

Timetable (complete): <https://www.math.b-tu.de/perl-ks/planung.cgi>

Lectures of faculty 1 within the winter term 2024/2025

Lehrveranstaltungen der Fakultät 1 im Wintersemester 2024/2025

Übersicht über sämtliche Lehrveranstaltungen

| | | | |
|--------------------|-----------------|-----------------|-------|
| Studiengang | <i>(course)</i> | Semester | Clear |
| Physics/Master | | 1.Fachsemester | Plan |

select: Physics/Master

finally click here

International Master Course Physics: Essential Infos

Stundenplan Wintersemester 2024/2025 : Physics/Master, Masterstudium

Stand: 26. August 2024 (siehe <https://www.math.b-tu.de/perl-ks/planung.cgi>)

| Zeit | Montag | Dienstag | Mittwoch | Donnerstag | Freitag |
|-----------------|---|---|---|---|---|
| 1. Block | | | Physics of Modern Devices VL, LG1A/304, L.Augel | | Functional material systems for micro sensors and actuators SE, . H.Schenk |
| 2. Block | 1.Wireless Sensor Networks: Concepts, Protocols and Applications VL/UE, ? K.Piotrowski, K.Turchan, P.Zielony (A-Woche) 2.Introduction to Semiconductor Physics VL, LG10/212, Wulf | 1.Advanced Seminar Experimental Physics SE, LG1A/121, M.Kot 2.Waves and Instabilities in Fluids VL, HG0.18, R.Borcia 3.Data exploration and system management using artificial intelligence/machine learning VL, VG1C/0.03, I.Jablonski | Solid State Theory VL, LG10/212, Seibold | Nanocatalysis - Fundamentals and Applications UE, LG1A/121, C.Morales Sanchez | |
| 3. Block | 1.Introduction to Semiconductor Physics UE, HG2.45, Wulf 2.Wireless Sensor Networks: Concepts, Protocols and Applications VL/UE, ZHG/SR1, K.Piotrowski, K.Turchan, P.Zielony | 1.Data exploration and system management using artificial intelligence/machine learning PR, VG1C/0.03, I.Jablonski 2.Nanocatalysis - Fundamentals and Applications VL, LG1A/121, C.Morales Sanchez 3.Light and Matter: Introduction VL, HG0.19, I.Fischer 4.Particle and Astroparticle Physics UE, LG10/212, S.Richter | 1.Nanocatalysis - Fundamentals and Applications VL, LG1A/121, I.Flege 2.Thermodynamics, Heat and Mass Transfer VL, LG10/212, Bestehorn | 1.Light and Matter: Introduction UE, HG0.19, I.Fischer 2.Semiconductor Physics for Applied Quantum Structures VL, LG1A/121, Wenger | |
| 4. Block | 1.Journal Club Light and Matter: Introduction SE, LG10/212, I.Fischer 2.Applied Spectroscopy SE, HG0.18, I.Flege 3.Wireless Sensor Networks: Concepts, Protocols and Applications VL/UE, ZHG/HSB, K.Piotrowski, K.Turchan, P.Zielony | | 1.Solid State Theory UE, LG10/212, M.Paul 2.Semiconductor Technology VL/UE, LG1A/121, Kahmen | 1.Thermodynamics, Heat and Mass Transfer UE, LG10/212, Bestehorn 2.Particle and Astroparticle Physics VL, HG2.44, W.Lohmann 3.Nano-Photonics SE, HG0.19, I.Fischer | |
| 5. Block | 1.Applied Spectroscopy SE, HG0.18, I.Flege 2.Waves and Instabilities in Fluids UE, LG1A/121, R.Borcia | | 1.Micro Systems VL, HG0.20, H.Schenk (A-Woche) 2.Micro Systems UE, HG0.20, H.Schenk (B-Woche) | 1.Physics of Modern Devices UE, LG1A/121, L.Augel 2.Particle and Astroparticle Physics VL, HG2.44, W.Lohmann 3.Physikalisches Kolloquium KOL, ZHG/SR1, I.Flege | |
| 6. Block | | Particle and Astroparticle Physics UE, LG10/212, S.Richter | Micro Systems VL, HG0.20, H.Schenk (A-Woche) | | |

Blockveranstaltungen/Veranstaltungen nach Vereinbarung:
[150192 Seibold: Solid State Theory](#)
[152111 Wenger: Semiconductor Physics for Applied Quantum Structures](#)
[150230 D.Gorelova: Computational Quantum Physics](#)
[150231 D.Gorelova: Computational Quantum Physics](#)

International Master Course Physics: Essential Infos

When and how to register for the modules?

- Register online within the first 3 weeks of the semester:

<https://www.b-tu.de/en/students/admissions-registrars-office/online-portal>

- You may cancel the registration up to one week before the begin of the examination period

Exception: Modules with continuous assessment (e.g. seminars) can only be cancelled within the first 3 weeks of the semester

see also:

https://www-docs.b-tu.de/studierende/public/files/Vorlesungsverzeichnis/SAP_WiSe_2024-25.pdf

Entrance to the Online-Portal

Please choose the entrance to the Online-Portal based on your enrolment number

| Enrolment number 7-digit | Enrolment number 6-digit |
|---|---|
| <i>Example 36 33 887</i> | <i>Example 36 30 17</i> |
| Entrance to the Online-Portal | Entrance to the Online-Portal |



International Master Course Physics: Essential Infos

E-learning-platform moodle

<https://www.b-tu.de/elearning/btu/?lang=en>



Welcome to the digital learning environment of BTU

Moodle-BTU is available to all teachers and students at the BTU. The learning management platform offers numerous possibilities for the digital enrichment of university teaching, from the distribution of teaching materials to electronic tests and the motivation/activation of students.

Log in



International Master Course Physics: Advanced seminar

| <u>Specialization Phase</u> | | Research Phase | |
|--|---|---|------------------------------|
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| <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> |

International Master Course Physics: Advanced seminar

Two advanced seminars (6 CP each): Experimental Physics **and** Theoretical Physics

This semester:

Experimental Physics I:

Topic: [Perovskite Solar cells](#)

Tuesday, 09:15 – 10:45 LG1A/121

Experimental Physics II:

Topic: [Nano-Photonics](#)

Thursday, 13:45 - 15:15 HG 0.19

Experimental Physics III:

Topic: [Functional material systems for micro sensors and actuators](#)

Time: Friday, 07:30 -09:00; online only

contact the responsables by email for further information

Responsible:

Dr. M. Kot (Malgorzata.Sowinska@b-tu.de)

Prof. I. Fischer (inga.fischer@b-tu.de)

Prof. H. Schenk
(harald.schenk@ipms.fraunhofer.de)

International Master Course Physics: Specialization

| <u>Specialization Phase</u> | | Research Phase | |
|--|---|---|------------------------------|
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| <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> |

International Master Course Physics: Specialization

- Choose specialization modules with an amount of 18+12 CP's
- Specialization modules have an experimental (and/or) theoretical focus
- Choose at least one from each category.

This semester:

[Introduction to Semiconductor Physics](#)

Focus: exp./theo.

Lecture: Monday 09:15-10:45, LG 10/212

Exercise: Monday 11:30 - 13:00, HG 2.45

Dr. U. Wulf (ulrich.wulf@b-tu.de)

[Solid State Theory](#)

Focus: theo.

Lecture: Wednesday 09:15 - 10:45, LG10/212

Exercise: Wednesday 13:45-15:15, LG10/212

Seminar on announcement

Prof. G. Seibold (seibold@b-tu.de)

International Master Course Physics: Specialization

Semiconductor Technology

Focus: exp.

Lecture/Exercise: Wednesday 13:45 – 14:15, LG1A/121

please contact Prof. Kahmen for further information

Prof. G. Kahmen (kahmen@ihp-microelectronics.com)

Thermodynamics, Heat and Mass Transfer

Focus: theor.

Lecture: Wednesday 11:30-13:00, LG10/212

Exercise: Thursday 13:45–15:15, LG10/212

Prof. M. Bestehorn (bestehorn@b-tu.de)

Micro Systems

Focus: exp.

Lecture: Wednesday (A-weeks)

15:30 – 17:00, 17:30 – 19:00, HG 0.20

Exercise: Wednesday (B-weeks)

15:30–17:00, HG 0.20

Prof. H. Schenk

(harald.schenk@ipms.fraunhofer.de)

International Master Course Physics: Specialization

Light and Matter: Introduction

Focus: exp.

Lecture: Tuesday 11:30-13:00, HG 0.19

Exercise: Thursday 11:30–13:00, HG 0.19

Prof. I. Fischer (inga.fischer@b-tu.de)

Particle and Astroparticle Physics

Focus: exp.

Lecture: Thursday 13:45-15:15 and 15:30-17:00, HG 2.44

Exercise: Tuesday 17:30–19:00, LG10/212

Prof. W. Lohmann (wolfgang.lohmann@desy.de)

Physics of Modern Devices

Focus: exp.

Lecture: Wednesday 07:00 - 09:00, LG 1A/304

Exercise: Thursday 15:30–17:00, LG 1A/121

Dr. L. Augel (lion.augel@b-tu.de)

International Master Course Physics: Specialization

[Nanocatalysis – Fundamentals and Applications](#)

Prof. I. Flege (flege@b-tu.de)

Focus: exp.

Lecture: Tuesday 11:30-13:00 and Wednesday 11:30-13:00, LG 1A/121

Exercises: Thursday 09:15-10:45, LG 1A/121

[Semiconductor Physics for Applied Quantum Structures](#)

Prof. C. Wenger (wenger@ihp-microelectronics.com)

Focus: exp.

Lecture: Thursday 11:30 – 13:00, LG 1A/121

Block course with lab

please contact Prof. Wenger for information about times

International Master Course Physics: Specialization

Waves and Instabilities in Fluids

Focus: theo.

Lecture: Tuesday 09:15-10:45, HG 0.18

Exercises: Monday 15:30-17:00, LG 1A/121

Dr. R. Borcia (borciar@b-tu.de)

Computational Quantum Physics

Focus: theo.

Lecture: Wednesday 11:30 – 13:00, HG 0.18

Exercises: Wednesday 13:45 – 15:15, HG 0.18

Prof. D. Gorelova (darya.gorelova@uni-hamburg.de)

International Master Course Physics: Essential Infos

| <u>Specialization Phase</u> | | Research Phase | |
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| <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> | <i>30 CP</i> |

International Master Course Physics: Minor subject

Minor subject: Choose two modules within the first 2 semester or internship over 9 weeks

This semester:

[Wireless sensor networks: Concepts, Protocols and Applications](#)

Prof. P. Langendörfer
(langendoerfer@ihp-microelectronics.com)

Lecture/Exercises: Monday 09:15 – 10:45, 11:30-13:00, ZHG SR 1
Monday 13:45 – 15:15, ZHG HS B

[Antennas I](#)

Prof. I. Ndip (ivan.ndip@b-tu.de)

Lecture: Friday 11:30 – 13:00, LG 3A/0.16
Exercise: Friday 13:45 - 15:15, LG 3A/0.16

International Master Course Physics: Minor subject

Fundamentals in Power Electronics

Lecture: Tuesday 11:30 – 13:00, LG 3A.324
13:45 – 15:15, LG 3A.324
Seminar: Tuesdsay 15:30 – 17:00, LG 3A.324
Lab: Thursday 11:30 –17:00, FZ3E/1.23
Friday 09:15-13:00, FZ3E/1.23

Prof. G. Möhlenkamp
(georg.moehlenkamp@b-tu.de)

Data exploration and system management using artificial intelligence / machine learning

Lecture: Tuesday 09:15 – 10:45, VG1C/0.03
Lab: Tuesday 11:30 – 13:00, VH1C/0.03

Dr. hab. I. Jablonski
(ireneusz.jablonski@b-tu.de)

Renewable Energy Technologies for Power Supply

Lecture: Thursday 15:30 –19:00, ZHG Audimax 1

Prof. Dr. L. Röntzsch
(lars.roentzsch@b-tu.de)

International Master Course Physics: Minor subject

[Experiments in aerodynamics and fluid dynamics](#)

Please check moodle for further information

Lecture: Tuesday 11:30 – 13:00
Center for Fluidynamics, 3.22

Prof. C. Egbers
(christoph.egbers@b-tu.de)

[Thermal Process Engineering and Equilibrium Thermodynamics](#)

Lecture: Tuesday 09:15 – 10:45, LG 4B - B.320
Exercise: Friday 11:30 – 13:00, Forschungszentrum 3E/226

Prof. F. Mauß
(FMauss@b-tu.de)

[Functional Analysis](#)

Lecture: Wednesday 11:30 – 13:00, HG 0.17
Friday 09:15 – 10:45, HG 0.17
Exercise: Friday 11:30 – 13:00, HG 3.45

Prof. G. Wachsmuth
(gerd.wachsmuth@b-tu.de)

International Master Course Physics: Minor subject

Image based Measurement Techniques for Aerodynamics

Lecture/Exercise: Thursday 13:45 – 17:00, Laborhalle 3D

Prof. A. Schröder
(andreas.schroeder@b-tu.de)

CFD Seminar

Lecture: Wednesday 17:15-18:45, LG 3A 324

Prof. H. Schmidt
(heiko.schmidt@b-tu.de)

Dimensional Analysis and Experimentation

Lecture: Monday 09:15 –10:45, Center for Fluidynamics 2.32
Exercise: Monday 11:30 – 13:00, Center for Fluidynamics 2.32

Prof. U. Harlander
(uwe.harlander@b-tu.de)

International Master Course Physics: Essential Infos

Minor subject: can also be accomplished as 9-week internship

- Internship should be related to the field of physics
- Should be done at an institute outside the university
- Some possibilities are listed on the next pages
- If you have decided on your preferences contact the institutions via email and submit an application
- Mention in your application that you intend to do the internship within the International Physics Master at BTU.

International Master Course Physics: Essential Infos

Minor subject: can also be accomplished as 9-week internship

Possibilities:



[IHP Frankfurt/Oder](#)

Contact: Prof. Christian Wenger
[click here for application page](#)



[DESY Zeuthen](#)

Contact: Prof. Wolfgang Lohmann
wolfgang.lohmann@desy.de

International Master Course Physics: Essential Infos

Minor subject: can also be accomplished as 9-week internship

Possibilities:



[Fraunhofer IPMS Dresden](#)

Contact: Prof. Harald Schenk
harald.schenk@ipms.fraunhofer.de



[IKZ Berlin](#)

Contact: Prof. Thomas Schröder
thomas.schroeder@ikz-berlin.de

International Master Course Physics: General studies

| Specialization Phase | | Research Phase | |
|--|---|---|------------------------------|
| Semester 1 | Semester 2 | Semester 3 | Semester 4 |
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| 30 CP | 30 CP | 30 CP | 30 CP |

International Master Course Physics: Essential Infos

In case of questions:

Student Council Physics: fsr-physik@b-tu.de

Prof. G. Seibold (seibold@b-tu.de)

Phone: +49 (0)355 693006

[International Relations Office](#)

Enjoy!