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Fakultät für Physik

Master Welcome Day 2023

Information for new (and advanced) students
enrolled in the study programs
Master Physics, Master Computational Science &
Master Physics Teacher Training

Welcome!

- **Welcome**
- **Introduction to the Faculty of Physics**
  - Research areas at the Faculty
  - Dean‘s office and Directorate of Studies
  - StudyServiceCenter (SSC) Physics
  - Diversity coordinator and Student representative
- **Studying at the Faculty**
  - Study organization: u:find, guidelines for course and exam registration, etc.
  - Code of Conduct
  - Information about recognition for prior study achievements
  - Information about the master’s thesis
  - Offers for academic writing
  - Specific information on the study plans
- **Tours through the building and library tours**

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Faculty of Physics

physik.univie.ac.at/en/

390 employees (46 professors)
~ 2.200 students (~400 beginners)
80 persons in administration/management

© Josef Kreplan

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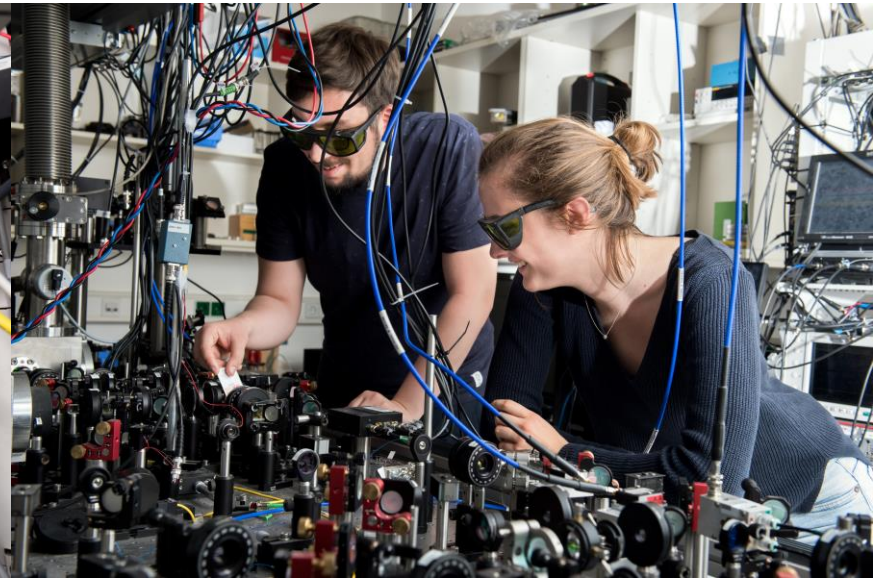

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Organisational structure of the Faculty of Physics

https://physik.univie.ac.at/en/about-us/deans-office/

Faculty management

Dean: Univ.-Prof. DI Dr. Robin Golser
V-Dean: Univ.-Prof. Dipl.-Phys. Dr. Stefan Fredenhagen
V-Dean: Univ.-Prof. Dr. Jani Kotakoski
Dekanatsdirektion: Gabriele Marzoner & Team
Diversity coordinator: Mag. Brigitte Bischof

Research

14 Research groups
Faculty Center for Nano Structure Research
3 Research platforms
3 Research networks
Environment and Climate Research Hub

Study & Teaching

Director of Studies Physics:
Assoz.-Prof. DI Dr.in Kerstin Hummer
Physics Directorate of Doctoral Studies:
Univ.-Prof. Mag. Dr. Thomas Pichler
StudyServiceCenter Physics: Ing. Kristina Wohlmuth

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Site map of the faculty

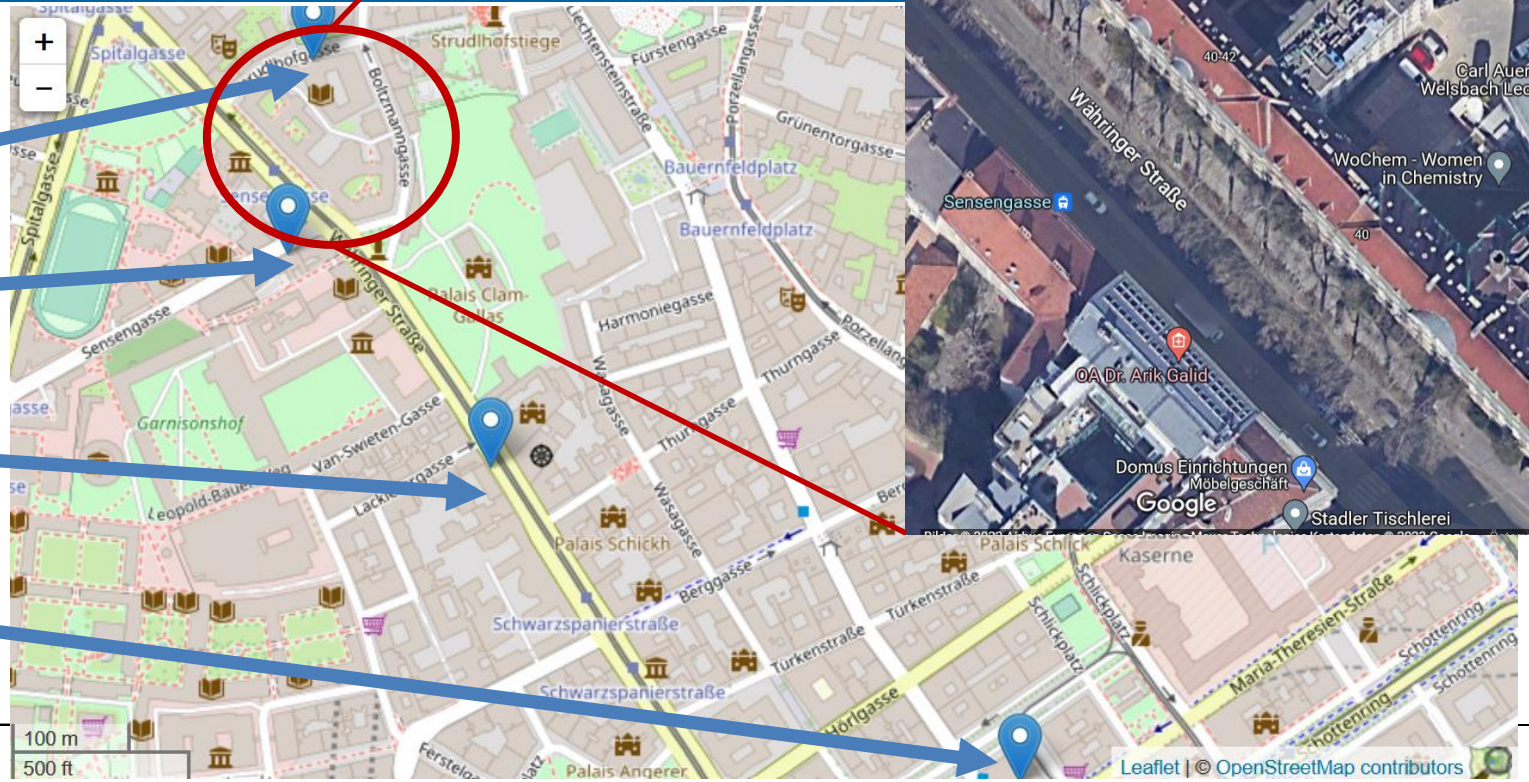
https://physik.univie.ac.at/en/how-to-find-us/how-to-find-us/

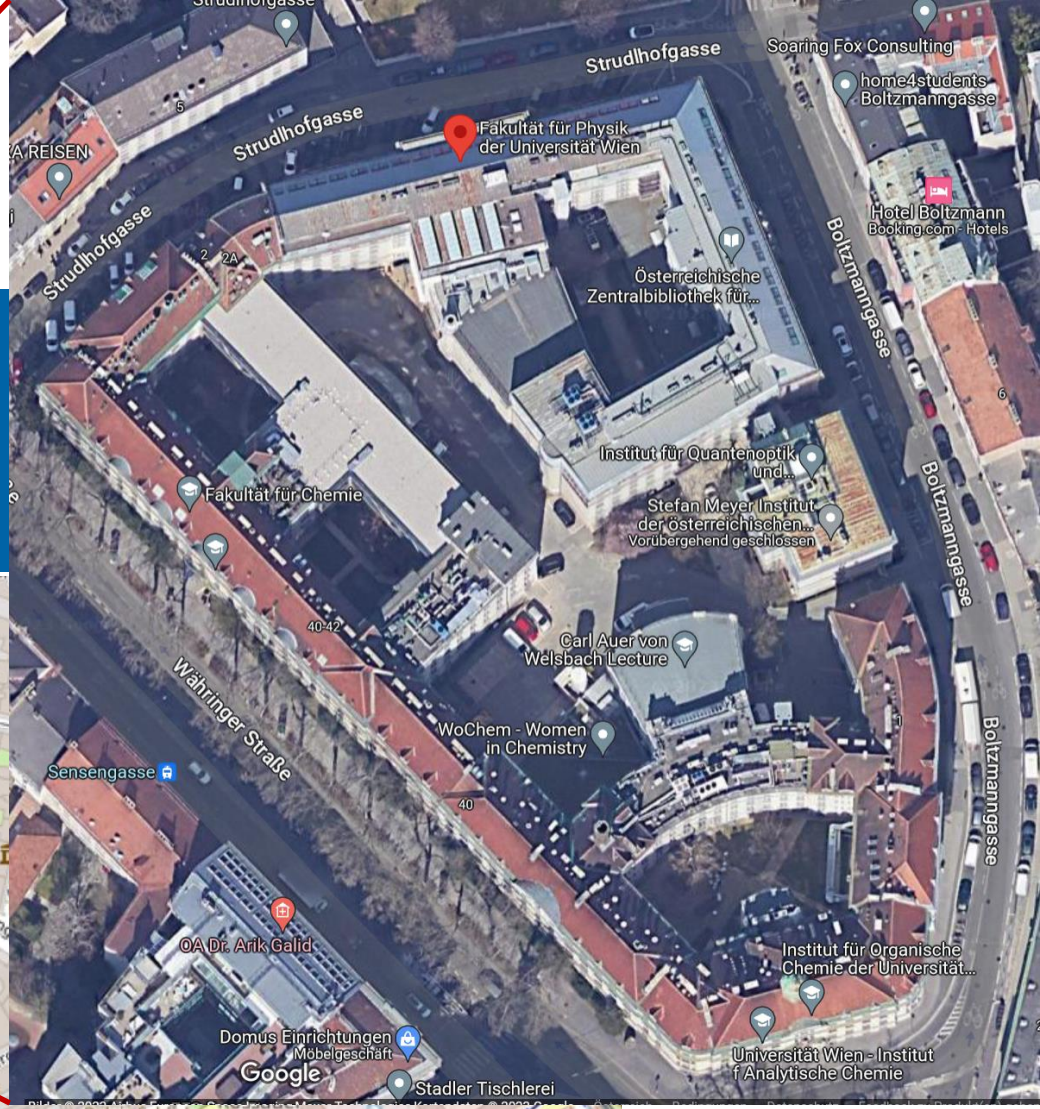
Strudlhofgasse 4
Boltzmanngasse 5

Sensengasse 8

Währingerstraße 17

Kolingasse 14-16





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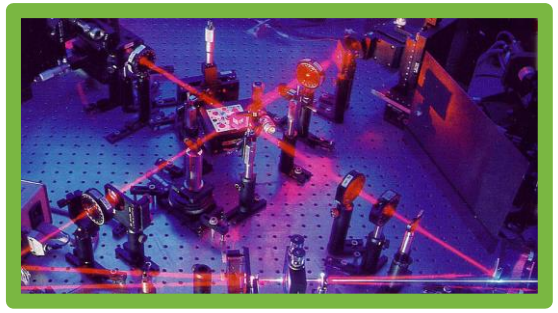
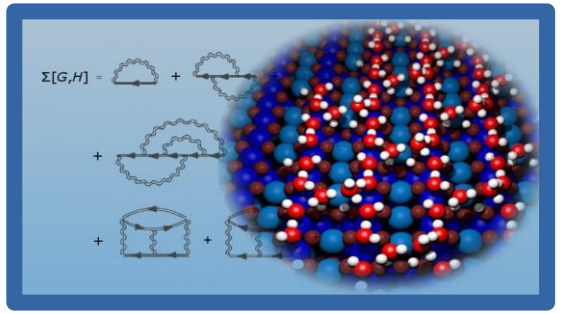
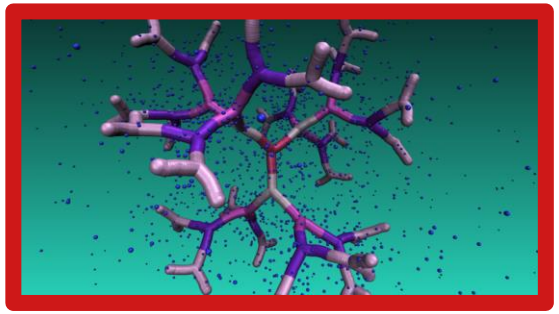
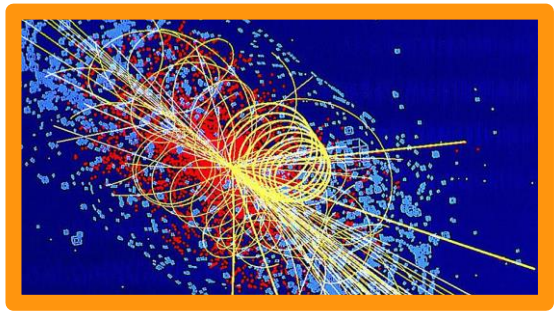
Research at the Faculty of Physics

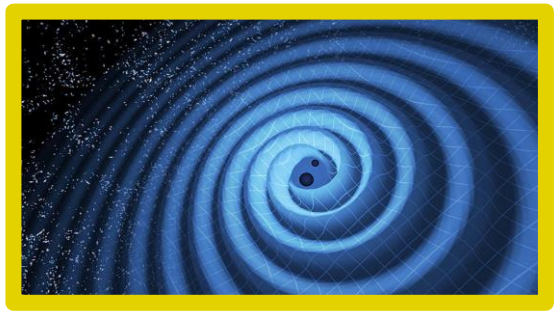


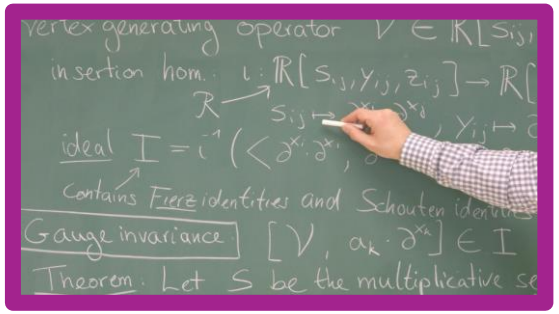


- Quantum Optics, Q-Nanophysics, Q-Information
- Computational Materials Physics
- Computational and Soft Matter Physics
- Particle, Gravitational and Mathematical Physics









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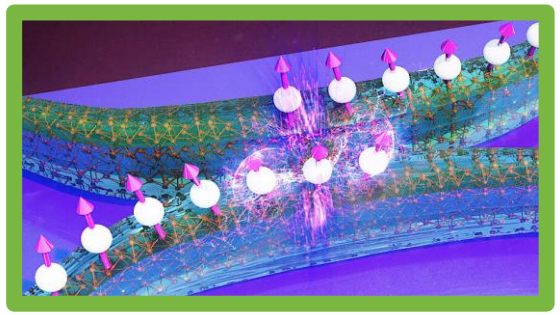
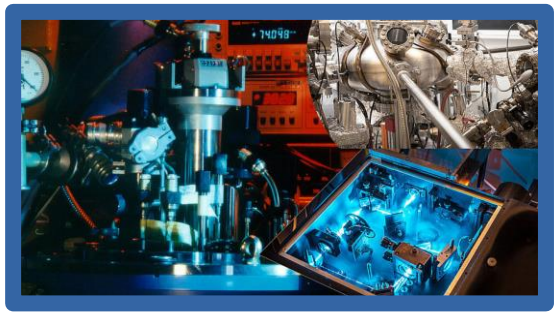
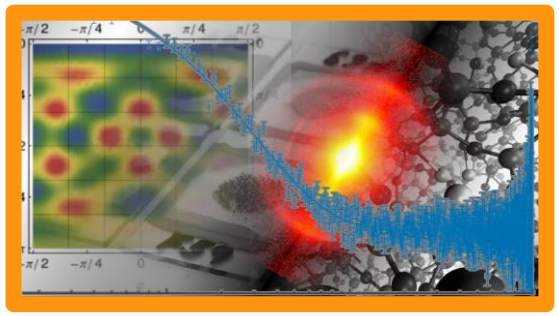
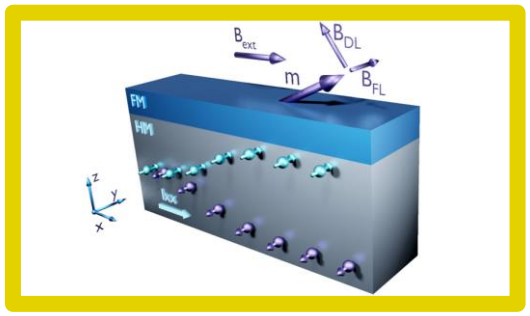
Research at the Faculty of Physics

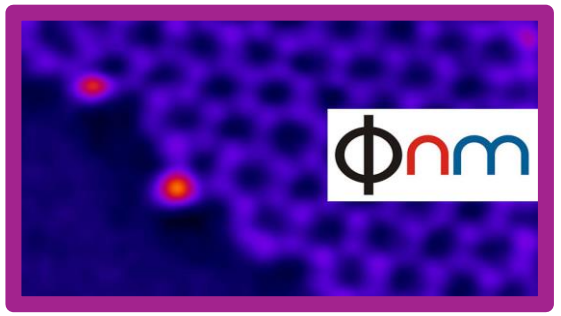
- Nanomagnetism and Magnonics
- Electronic Properties of Materials
- Dynamics of Condensed Systems
- Physics of Functional Materials
- Physics of Nanostructured Materials











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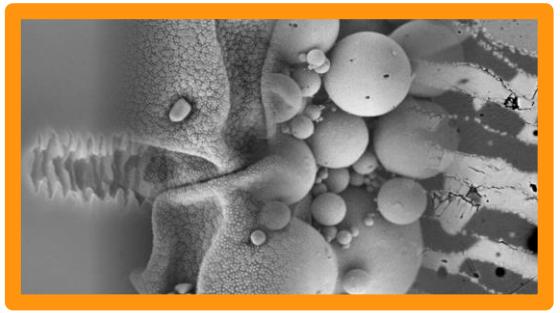
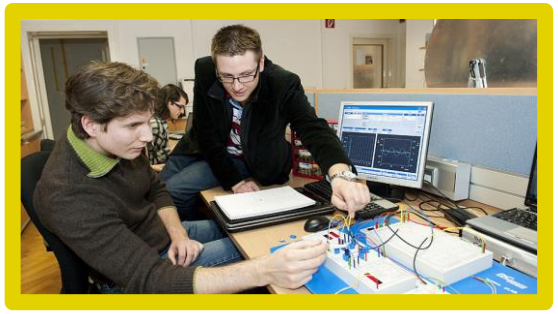
Research at the Faculty of Physics

- Aerosol Physics and Environmental Physics
- Isotope Physics
- Faculty Centre for Nanostructure Research
- Basic Experimental Physics Training and University Didactics





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Directorate of study program physics (SPL)

https://ssc-physik.univie.ac.at/ueber-uns/studienprogrammleitung/

Directors of Studies Physics

Assoz.-Prof. DI Dr.in Kerstin Hummer (MA Comp. Science)
ao Univ.-Prof. Mag. Dr. Erhard Schafler (BA Physik)
Univ.-Prof. Dr. Martin Hopf (BA & MA UF Physik)
Assoz.-Prof. Dr. Paul Winkler (MA Physics)

Consultation hours: see SSC Physik Webseite

SSC Physics

Director: Ing. Kristina Wohlmuth
Helene Knoll
Judith Suttner, BSc

Studies conference „StuKo“

Advisory board of the SPL
Members: Teachers and Students

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StudyServiceCenter (SSC) Physics

https://ssc-physik.univie.ac.at/en/

"... responsible for teaching and study administration at the Faculty of Physics"

Colleagues from the SSC can help you in all administrative and legal concerns related to your studies, specifically:

- for many questions that arise during the studies
- Information on registering and deregistering for courses and exams
- Recognition of examination results: https://ssc-physik.univie.ac.at/studieren/anerkennungen/
- Graduation
- and much more...

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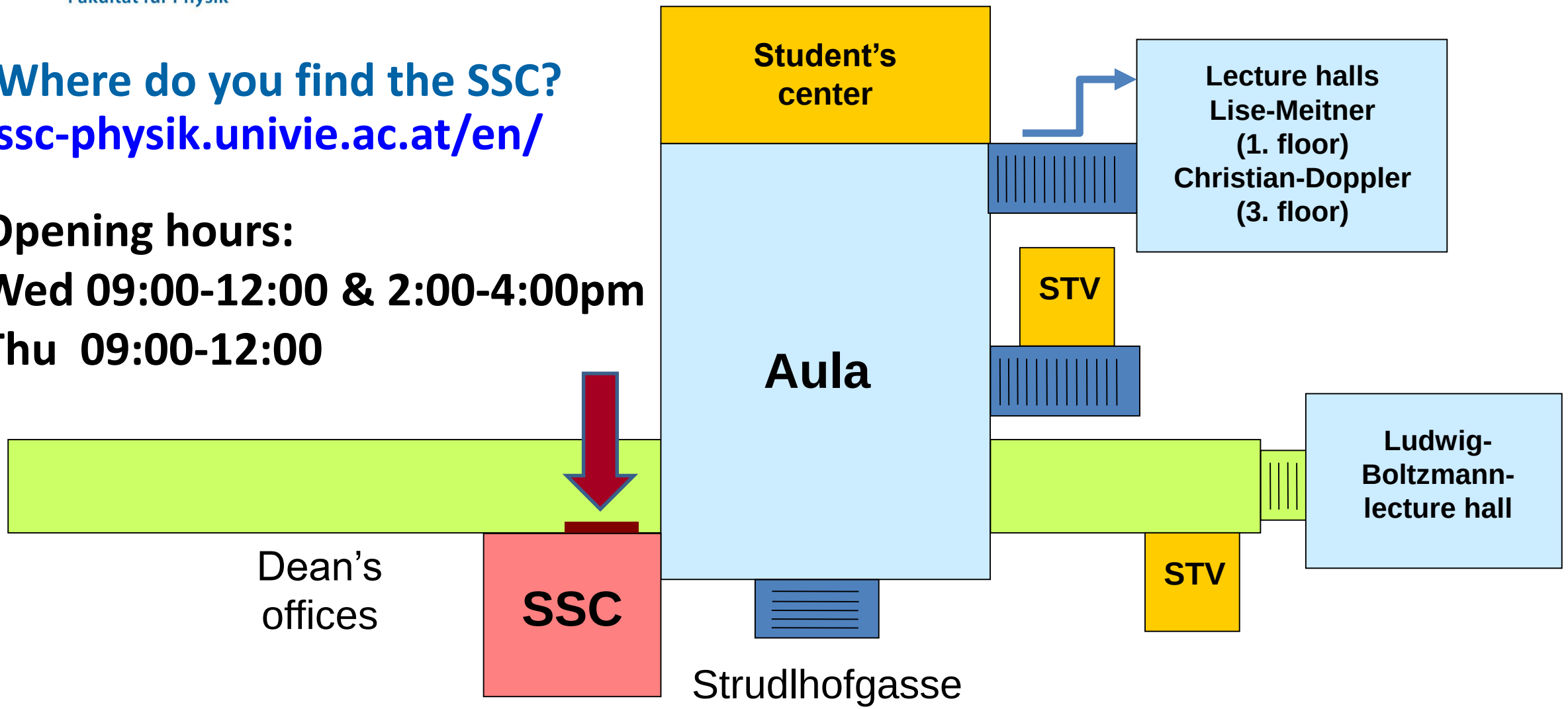
Where do you find the SSC?
ssc-physik.univie.ac.at/en/

Opening hours:
Wed 09:00-12:00 & 2:00-4:00pm
Thu 09:00-12:00



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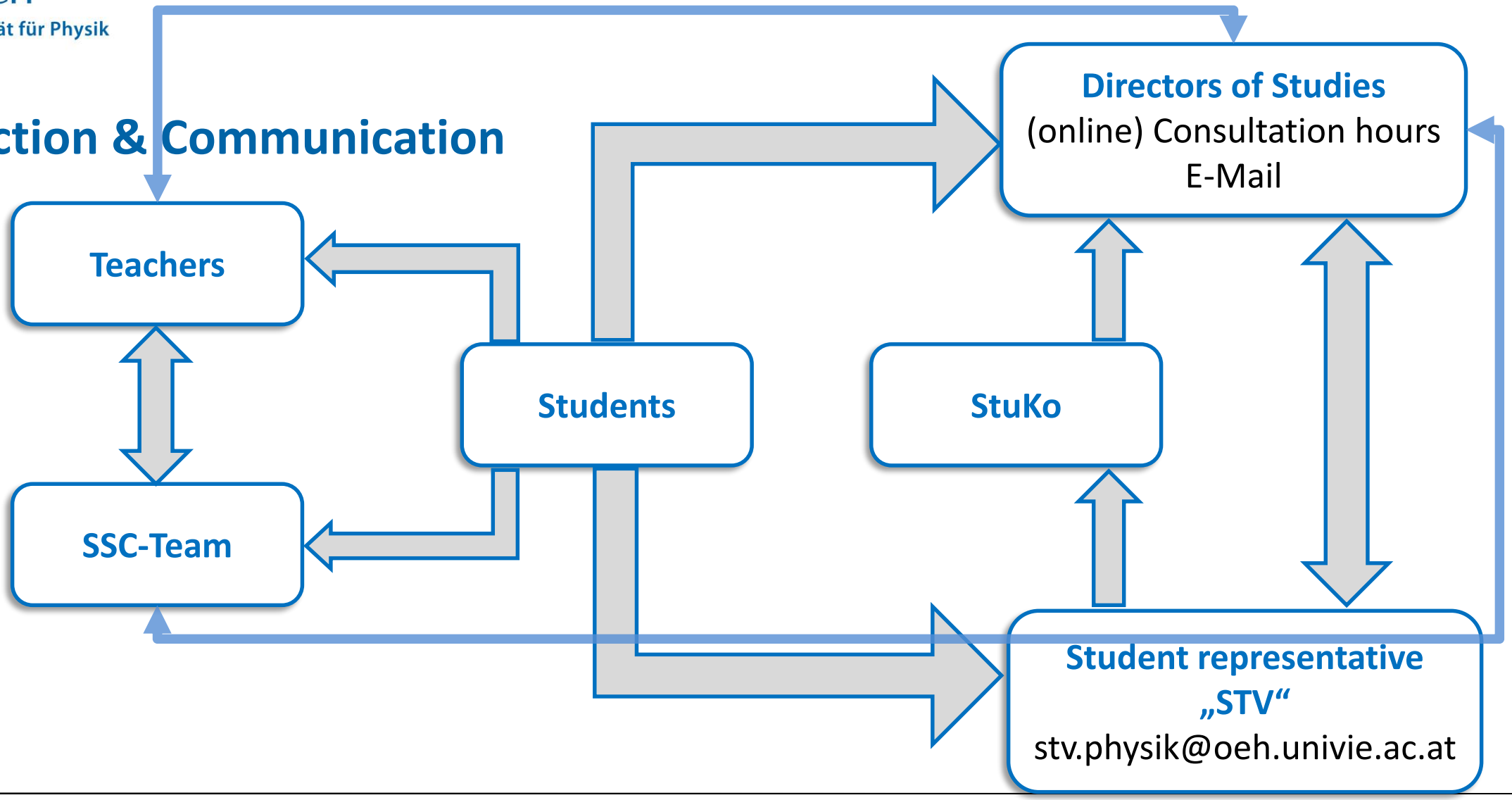
Interaction & Communication



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Diversity Coordinator at the Faculty of Physics

- Brigitte Bischof - on-site contact for your concerns regarding gender equality & diversity
- Contact:

  Office hours: Tuesday/Thursday 10:00-12:00 Raum 3E52

  Telefone: +43-1-4277-51005

  Email: brigitte.bischof@univie.ac.at

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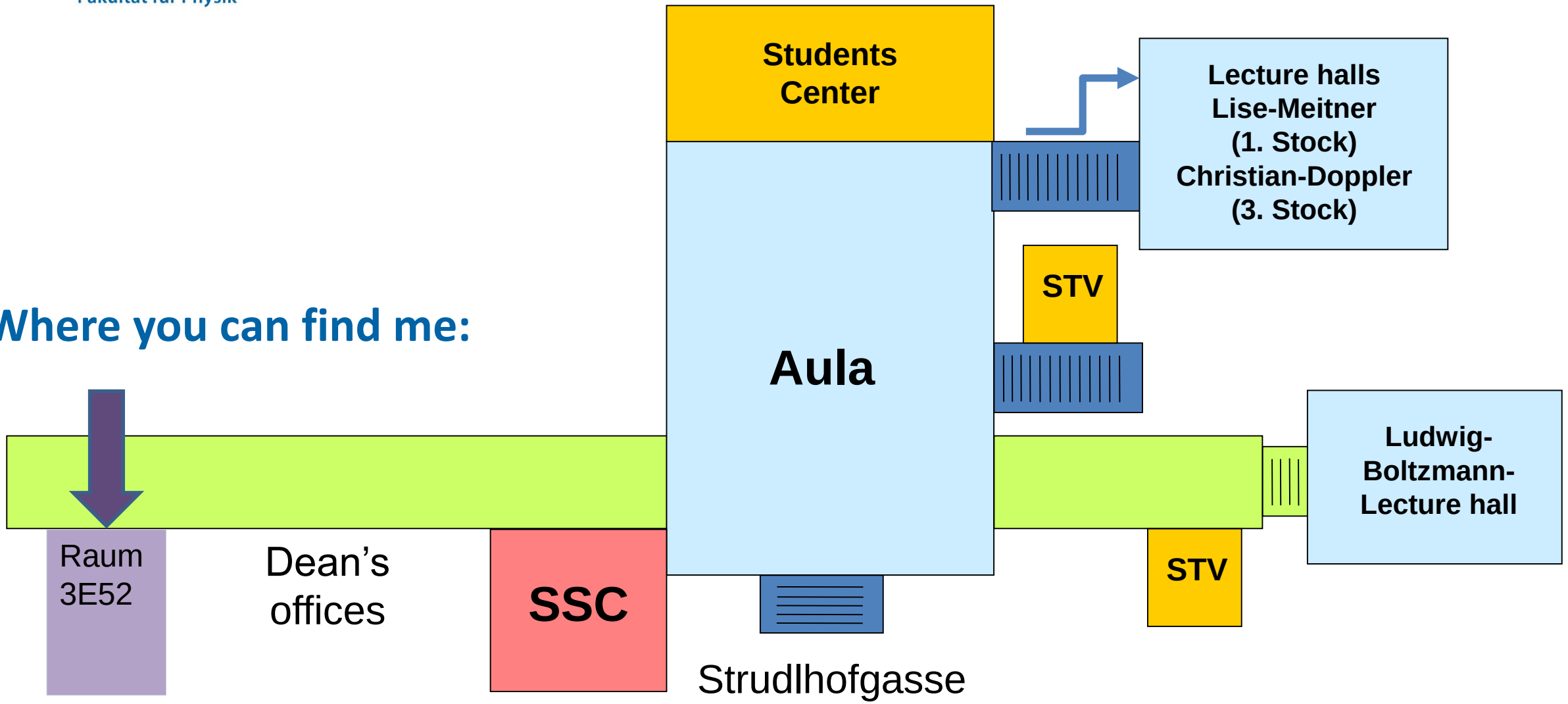
Where you can find me:



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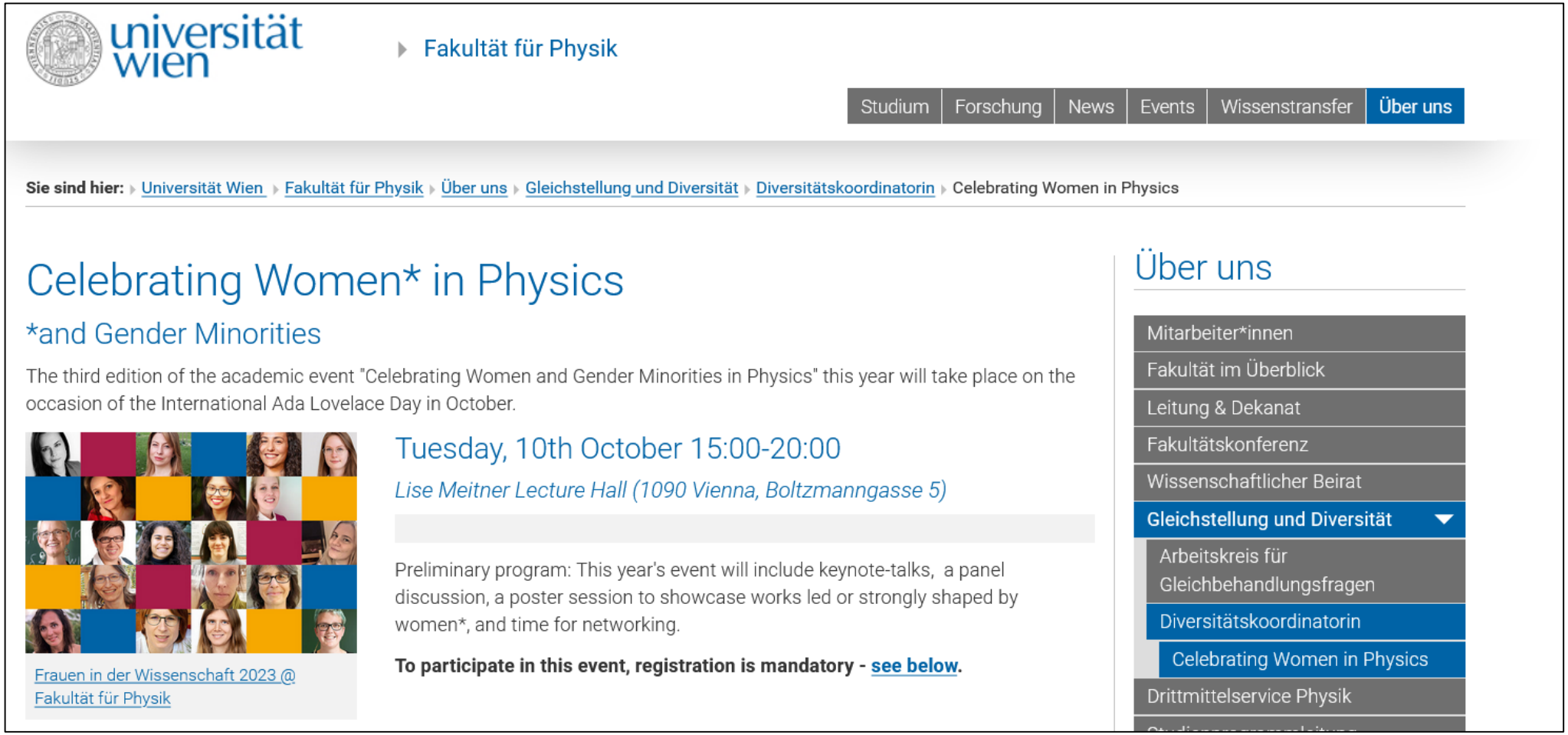
Announcement



https://physik.univie.ac.at/celebrating

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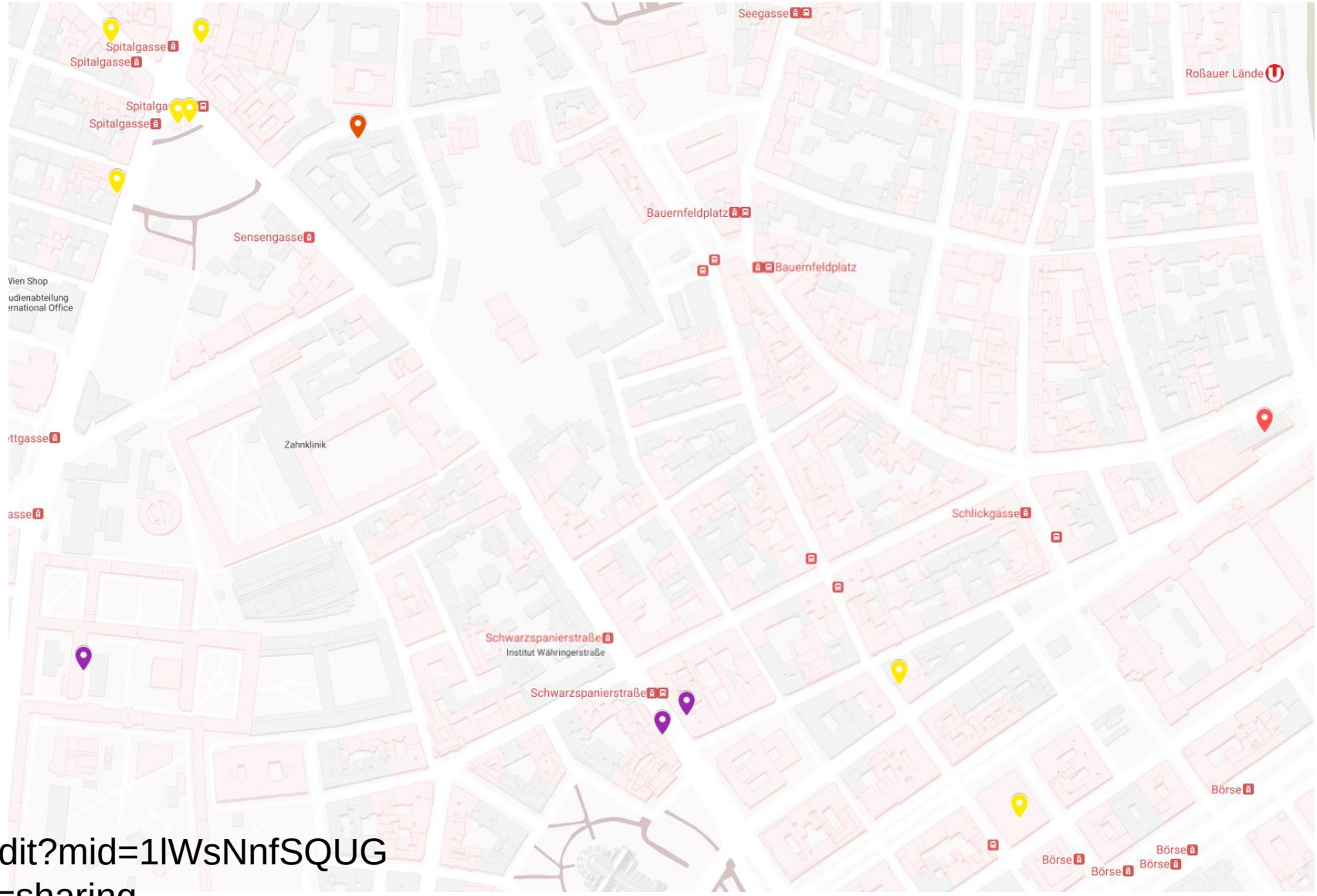
Introduction of the Student representative („STV“): Master Physics student David Walcher



https://www.google.com/maps/d/edit?mid=1lWsNnfSQUG8AEEjLhUmY1dNcEjdBw9U&usp=sharing

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Questions

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Study programs at the Faculty of Physics

- Bachelor Physics (instruction languages German and English)
- Bachelor Teaching Physics (instruction languages German and English)
- Master Physics (instruction language English)
- Master Computational Science (instruction language English)
- Master Teaching Physics (instruction languages German and English)
- Extension curriculum Basics for Computational Science (instruction languages German and English)
- Doctoral studies Physics (instruction language English)

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Beginners numbers

	SJ 19/20	SJ 20/21	SJ 21/22	SJ 22/23
BA Physics	417	481	446	287
BA Physics Teacher	125	146	88	108
MA Physics	98	88	83	92
MA Comp. Science	49	78	55	11
MA Physics Teacher	41	37	32	40
Total	**730**	**830**	**704**	**538**

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Legal basis for studies:

From admission until graduation you have rights and obligations, which guide you through your studies.

- University law (Universitätsgesetz 2002, II. Teil: Studienrecht)
- By-laws of the University of Vienna – Study law
- Curriculum – legal basis of study program

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Curriculum (study plan)

- informs on **content and structure** of a study program.
- defines **study goals and the qualification profile** of graduates
- specifies, which **mandatory and elective modul groups** need to be passed positive in order to finish the master study Physics.
- contains descriptions of **moduls** (goals and structure of moduls, prerequisites, performance record, language)
- the master study encompasses 120 ECTS credits, corresponding to a full-time study with a study duration of 4 semesters.
- recommended study path encompasses ~30 ECTS credits per semester.

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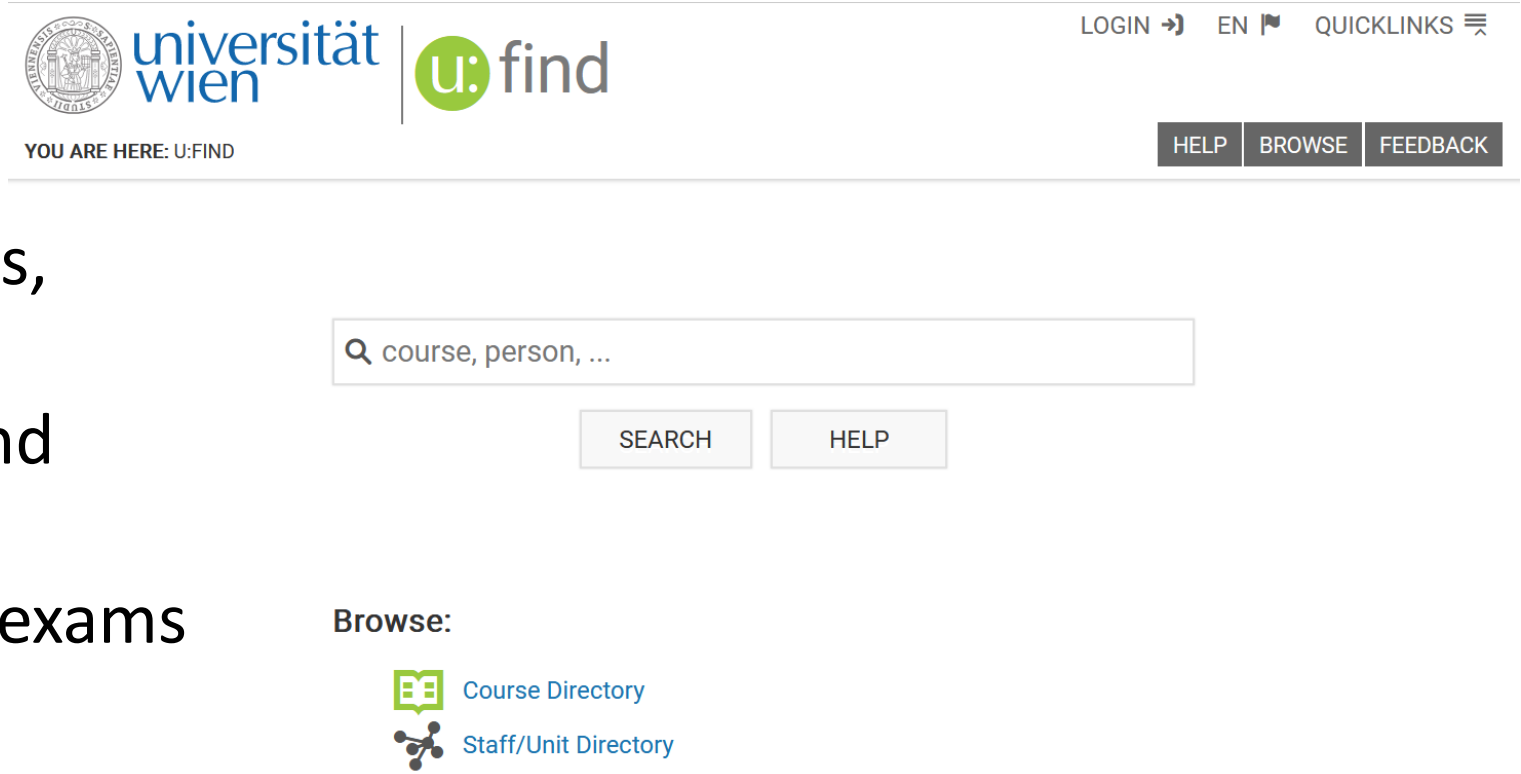
u:find – course/staff/unit directory



- Searching for courses, exams, people or organisations
- Announcement of course and examination dates
- Registration to courses and exams (forward to u:space)

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LOGIN EN QUICKLINKS

YOU ARE HERE: U:FIND

Warning! The directory

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Practical desig

5.00 ECTS (3.00 SV
Moodle

Registration/D

Note: The time of y

Register/De

Details

Language: Englis

Examination da

Thursday
Wednesday
Thursday
N Wednesday
Thursday

Lecturers

- Stephen M

Information

Aims, contents and method of the course

Updated25 January 2023 This course aims to bridge the gap between theoretical textbooks and the "real world" of the scientist who uses optical instruments and detectors. Examples are drawn from the teacher's experience in universities and in industry. Topics include the analysis of lenses, telescopes, and cameras, different models of light, optical design, CCD detection, polarization, interferometers, color, and more. Students may influence the choice of special topics, and questions from students are welcome during lectures.

Assessment and permitted materials

Optional homework assignments will be provided every few weeks. The test will also contain additional material from the lectures. The format test will be an oral examination. The test will last less than 30 minutes.

Minimum requirements and assessment criteria

A score of 50% on the final examination is required to pass the course.

Examination topics

The exam will cover the material presented in the lectures, including homework assignments.

Reading list

There is no required textbook, but recommendations will be made during lectures. Extensive PowerPoint slides and notes will be made available for every lecture.

Association in the course directory

M-VAF A 2, M-VAF B, UF MA PHYS 01a, UF MA PHYS 01b

- UF MA PHYS 01a Subject specific Science (16 ECTS)
  Master Teacher Training Programme: Physics (196 058, 199 523) ➞ *Alternative Group of Compulsory Modules (22 ECTS)*
- UF MA PHYS 01b Subject specific Science (12 ECTS)
  Master Teacher Training Programme: Physics (196 058, 199 523) ➞ *Alternative Group of Compulsory Modules (22 ECTS)*
- M-VAF A 2 Specialization in current research topics A 2 (10 ECTS)
  Master Physics (876 [2] - Version 2018) ➞ *Alternative compulsory modul Specialization in current research topics A (10 ECTS)*
- M-VAF B Specialization in current research topics B (20 ECTS)
  Master Physics (876 [2] - Version 2018) ➞ *Compulsory module Specialization in current research topics B (20 ECTS)*
- 52 - Physics Directorate of Doctoral Studies

Last modified: Th 27.07.2023 11:07

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Study law: courses with non-continuous (NPI) or continuous assesment (PI)

NPI courses

- Lectures (VO)
- Registration in u:find
- However, there are no obligations attached to the registration
- automatic access to Moodle
- Performance is determined by a course examination or module examination (one "examination act")
- Repeat dates for exams (3 dates at the beginning, middle, end of the following semester)

PI courses

- (exam preparation) exercises ((P)UE), seminars (SE), lab courses (PR/LP)
- Timely registration in u:space required (SPL determines how space is allocated, bulletin)
- Oral and/or written partial performances are required
- The overall grade is determined from these partial performances (info in u:find
- compulsory attendance in the 1st unit (confirmation of attendance)

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Study law: Courses preparing for exams

Exercises (UE), Seminars (SE),…

- Compulsory according to curriculum
- ECTS are part of the study program (Curriculum)
- Registration via u:find required

Preparing exercises (PUE)

- Not curriculum-relevant
- ECTS are not part of the Master program
- serve as preparation for the module exam
- Registration is not obligatory, but recommended
- With the registration via u:find the participation is obligatory and one receives a grade according to the partial performances achieved
- Contents are inherently examined in the module

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Study law: Registration & Deregistration deadlines

PI courses

- Must be adhered to without exception!
- Are announced in the u:find
- Students can deregister on their own until the end of the deadline, after that a valid reason has to be proven.
- If you do not show up for the 1st unit without a valid reason, you will be deregistered by the lecturer.
- If you have confirmed your place with your attendance in the 1st unit, you will be evaluated if you do not deregister.

Exams

- Must be adhered to without exception!
- Are announced in u:find
- Only registered students are allowed to take part in an exam.
- Lecturers and SSC do NOT carry out late registrations!
- Students can deregister independently until the deregistration deadline, afterwards by the lecturer, if a valid reason is given.
- Failure to appear will result in suspension from the next examination date

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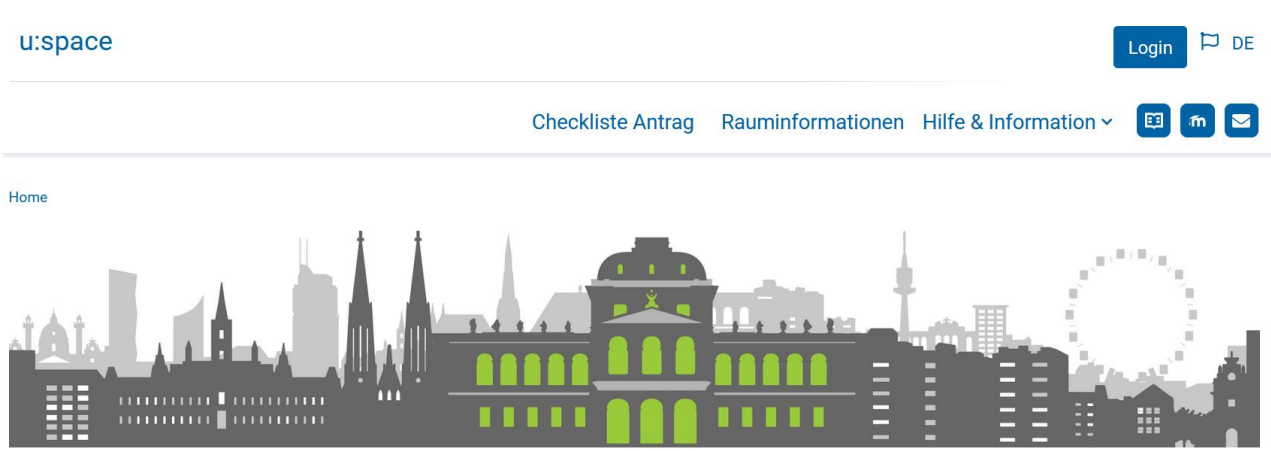

u:space – the portal for your studies

- Application for admission to studies
- Ordering the u:card
- Payment of tuition/ÖH fees
- Registering for/deregistering from courses and exams
- Checking grades and study progress in the examination passport
- Downloading and printing your study documents (collective certificate, confirmation of study, study sheet, etc.)
- Room information (room type, equipment, capacity, location of rooms)

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moodle

Moodle – E-Learning platform of the University of Vienna

- Registration to Moodle-courses is automatically done with the registration in u:find
- Exchange between teachers and students about related courses
- Access to learning materials like scripts, slides, exercise sheets, handouts
- Working on tasks for partial performance, online intermediate tests
- Organisation of group changes, forum for students

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Recognition for previous study achievements

- Recognitions are regulated in the Universities Act §78. Study achievements from other studies or from other universities can be recognized for a study program if there are no significant differences with regard to the acquired competences (learning outcomes) defined in the curriculum.
- If you are not clear about that: contact the responsible V-SPL/SPL before you hand in the forms
- Information at https://ssc-physik.univie.ac.at/studieren/anerkennungen/

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Recognition for previous study achievements

- Recognition can only be carried out by means of a **formal application**.
- Recognition for examinations, other academic achievements, activities and qualifications already **completed BEFORE admission** must be applied for **no later than the end of the second semester of the course of study**.
- **Recognized courses must be used toward the degree.**
- Information on formal and content criteria can be found on the Studienpräses office page (German).

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Code of Conduct:

- The CoC lays down a binding framework of conduct.
- The members of the University of Vienna shall familiarise themselves with the applicable regulations and guidelines and be conscious of the share which they personally take in this joint responsibility.
- Good academic practice
- Relations between members of the University of Vienna

  The University of Vienna conceives itself as a **community of all its members:** individuals of different age and sex, of different social and geographic origin, shaped by different situations in life and by different experiences, world views, and abilities. **Hence any dealings between members of the University shall be marked by mutual respect and esteem. Intolerance, discriminating or offensive behaviour, or favouritism, will not in any way be accepted at the University of Vienna;**

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Code of Conduct:

- **Sexual harassment and mobbing** of any kind are incompatible with the principle of mutual respect in interpersonal relations; they shall therefore **not in any way be tolerated at the University of Vienna, and may prompt sanctions under criminal or labour law.** In particular, in relationships of dependency (e.g., executive/staff, teacher/student), it is of the utmost importance to keep an appropriate distance.
- Contact points, if you are affected by unacceptable behavior on the part of your colleagues:
  Sexual Harassment & Bullying Counselling Office
  Threat Management of the University of Vienna **+43-1-4277-777**
  Diversity coordinator and Executives of the Faculty

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Accessible Studying team (“Team Barrierefrei”)

For students with special needs:

- Motor, sensory, or mental impairments.
- Chronic illnesses
- Autistic perception
- Learning and reading disabilities
- Acute, injury, accident sequelae

Assistance with:

- Recommendations to program directors
- Adaptation of exams and curricula to meet individual needs
- Support and technology in the course of study
- Financial support and leave of absence

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Accessible Studies: studieren.univie.ac.at/en/accessible-studies/

- Students with impairments, disabilities or illnesses
- The aim is to compensate for disadvantages in exams and PI courses caused by impairments.
- Counselling of the "Accessible Studying team (Team Barrierefrei)" is held in German and English.
- The study program directors make recommendations regarding changes in examination methods.
- The study program directors are the direct contact persons who, if contacted in time, can adapt the course and examination schedule to you.
- For more information see https://ssc-physik.univie.ac.at/en/studying/alternative-methods-of-examination/

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Questions

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MA Physics

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MA Physics Curriculum: §1 Objectives and qalification profile

(1) Based on the comprehensive general education in the field of physics during the bachelor's programme, the master's programme in Physics at the University of Vienna **allows students to choose an emphasis and specialisation**, and introduces them to the practice of academic research and writing. The master's programme in Physics is based on the **research profile of the Faculty of Physics…**

(2) …graduates of the master's programme in Physics at the University of Vienna are qualified to observe complex phenomena in nature and technology by means of experiments and to describe these in a theoretical and mathematical way or to simulate and model these aided by computers. They have profound knowledge of and are **able to apply modern research methods in their discipline**. Through their profound academic education and their ability to think analytically in research, **graduates are qualified to work independently and methodologically** and **develop problem-solving competences** in a variety of different areas.

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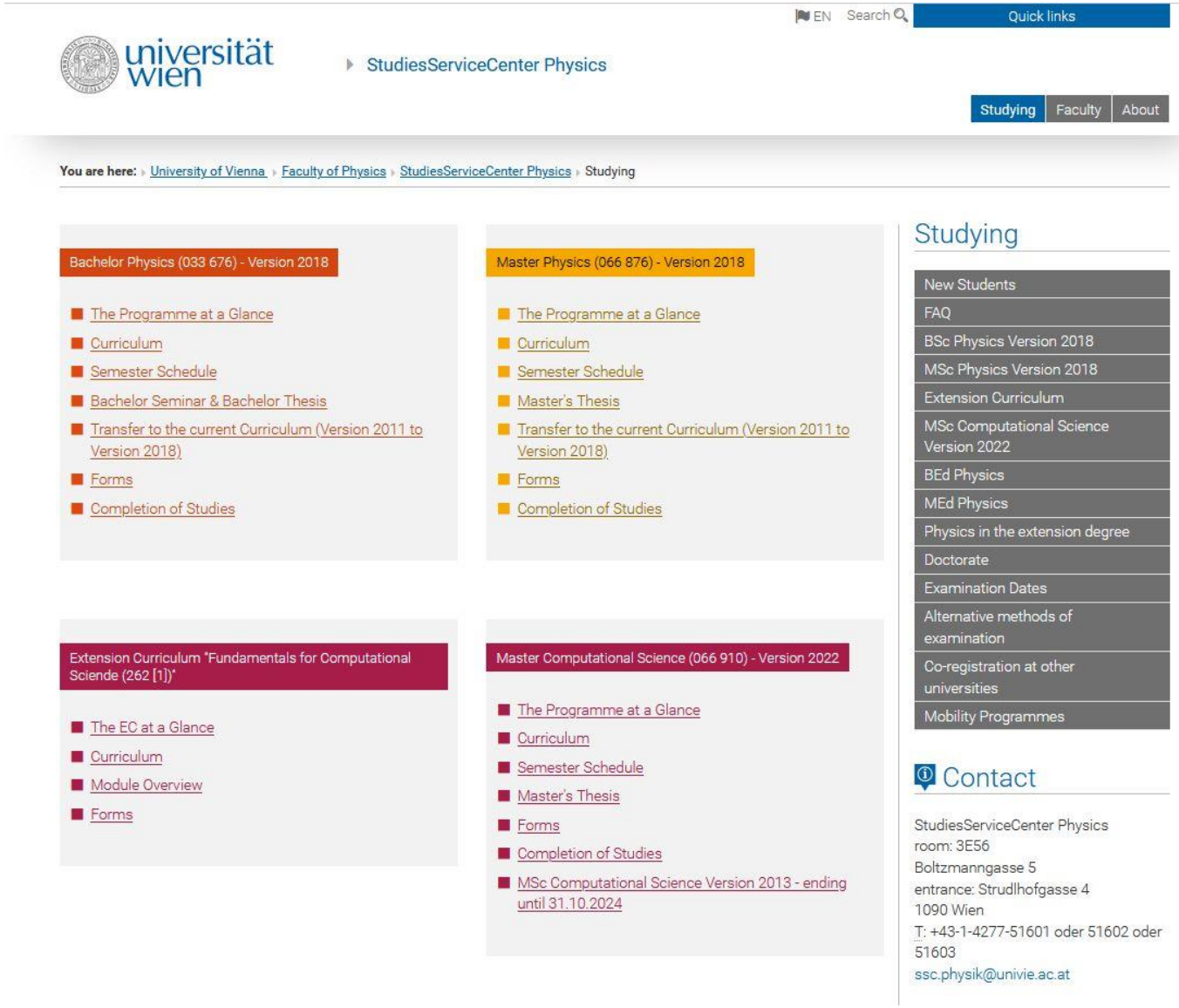
Finding the information online:

https://ssc-physik.univie.ac.at/en/



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MA Physics

Wahlmodule
Advanced Computational Physics
Advanced Electronic Structure
Advanced Particle Physics
Advanced Physics of Nuclei and Isotopes
Advanced Quantum Mechanics
Advanced Statistical Physics and Soft Matter Physics
Allgemeine Relativitätstheorie und Kosmologie
Atmosphärische Aerosolphysik
Experiments in Quantum Optics & Quantum Information
Physik der kondensierten Materie
Streuung, Mikroskopie und Spektroskopie
Theory of Quantum Optics & Quantum Information

Semester Schedule for the Master's Degree in Physics

In order to complete the master's degree in the intended time of four semesters, students are advised to follow the following semester schedule.

Semester Schedule Master Physik

1st Semester 30 ECTS	2nd Semester 30 ECTS	3rd Semester 30 ECTS	4th Semester 30 ECTS
3 Modules from Elective Modules "Core" **M-CORE 1-12** (30 ECTS)	Specialisation in Current Research Topics A **M-VAF A1** or **M-VAF A2** (10 ECTS)	Specialisation in Current Research Topics B **M-VAF B** (10 ECTS)	Master's Thesis (27 ECTS)
	Specialisation in Current Research Topics B **M-VAF B** (10 ECTS)	Extension **M-ERG** (10 ECTS)	
	Extension **M-ERG** (10 ECTS)	Specialisation **M-SPEZ** (10 ECTS)	Defensio (3 ECTS)

Studying

- New Students
- FAQ
- BSc Physics Version 2018
- MSc Physics Version 2018
  - Semester Schedule
  - Courses
  - Master's Thesis
  - Transfer to the current Curriculum (Version 2018)
  - Forms
  - Completion of Studies
- Extension Curriculum
- MSc Computational Science Version 2022
- BEd Physics
- MEd Physics
- Physics in the extension degree
- Doctorate
- Examination Dates

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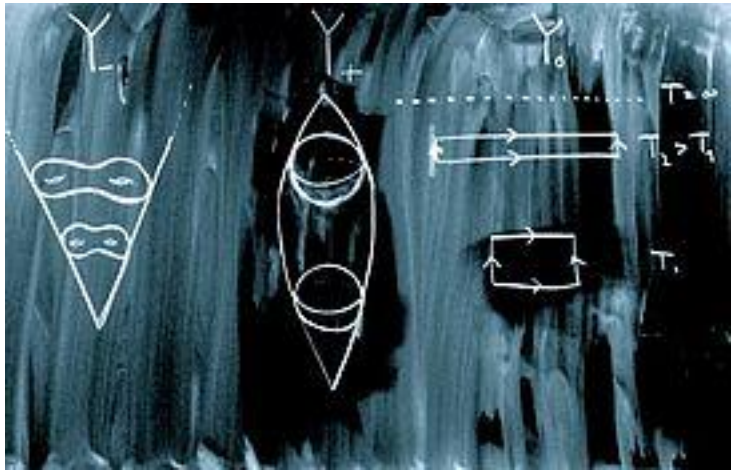
Master Class Mathematical Physics

https://mcmp.univie.ac.at/

MCMP is an initiative **within** the master programs "Mathematics" and "Physics" for students interested in the intersection of the two disciplines

- MCMP seminars
- Advice on relevant courses, counselling
- Letter of recommendation upon successful completion



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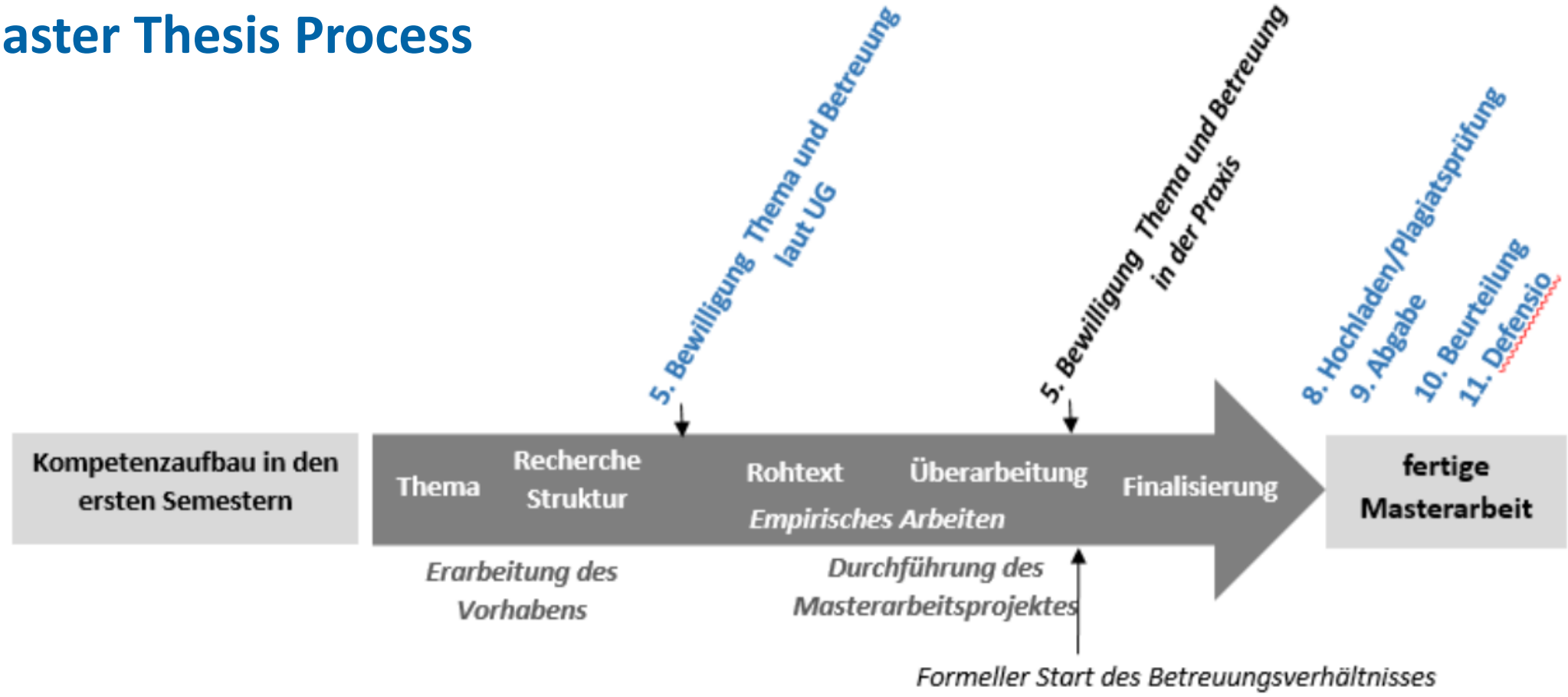
Master Thesis Process



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Master Thesis Process

- The UG 2002 stipulates that a master's thesis can be written within six months if the topic is available, see §81(2).
- As a formal start of these six months: registration of topic and supervision
- For registering the topic and supervision: forms are available at the SSC Physics webpage. Additional an Exposé (signed by the supervisor and the student) is required.
- The master thesis represents the first steps in independent scientific work.
- Often takes place within the framework of current research projects.
- **The master's thesis is the most extensive project of your studies to date; a project in which you experience its ups and downs.**

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Offers for academic writing

- Literature given in 260032 KU Specialization
- "Schreibmentoring":
  - For students who want to build up and/or deepen their scientific writing competence (in German).
  - Input on many topics of scientific writing: scientific language, text production, dealing with literature, text revision, outlining, argumentation and much more.
  - Information about the weekly group meetings are announced by the SPL via Newsletter

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Questions

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MA Computational Science

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MA CS Curriculum: §1 Objectives and qalification profile

(1) … **is a sound education in computational and mathematical methods of this modern, interdisciplinary approach and their practical application in natural sciences** (astronomy and astrophysics, biology, chemistry, meteorology, pharmacy and physics).

(2) … graduates …are qualified to **develop solutions for complex problems in natural sciences aided by computers** in interdisciplinary teams. They are able to capture problems in natural sciences in models, to **develop algorithms and software to address these problems, to make computations on modern computer systems and to analyse and visualise data and models.** For this, they are making use of **knowledge of numerical mathematics, modern programming paradigms and high-performance computing** acquired in the master's programme. Graduates are familiar with **methods of data-driven research** (data science and machine learning) and their application in natural sciences.

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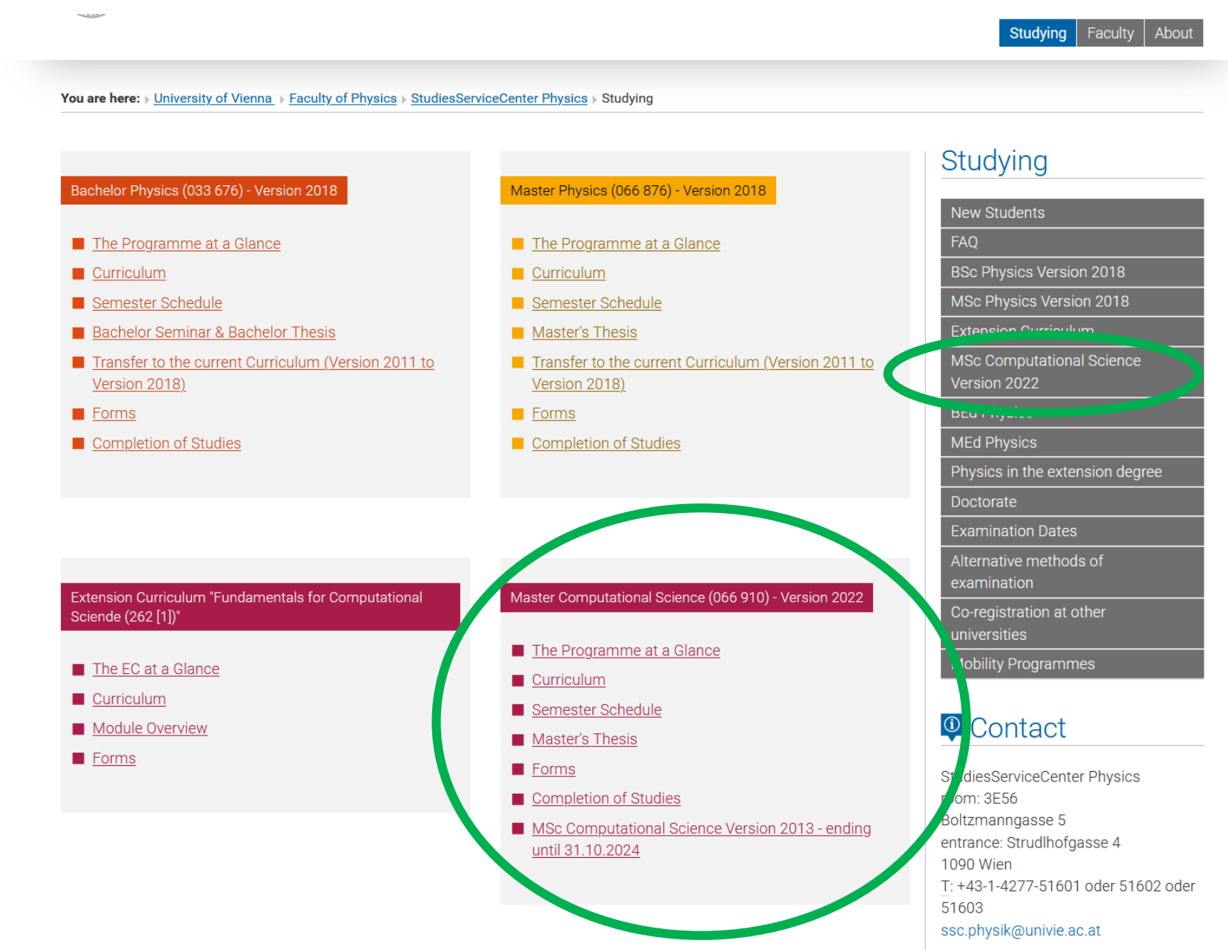
MA CS study program: Finding information

- Curriculum
- SSC Physics



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MA CS study program: Finding information

- Curriculum
- SSC Physics
- U:find
  (course list of the current term)

Chapter in Course Directory 2023W:
> Directorate of Studies 26 - Physics

Master Computational Science (910 [2] - Version 2022)

The faculty welcomes all new students enrolled in our Master Physics and Master Computational Science programs as well as all advanced students to a Master Welcome Day 2023/2024.
Details can be found at https://ssc-physik.univie.ac.at/fileadmin/user_upload/s_ssc_physik/Master/Master_Welcome_Day.pdf

In order to be able to register for courses for the Master's programme "Computational Science", you must first select your focus. To do this, open u:space, select "Exam Pass" in the "Studies" grid and open "Master's programme Computational Science". Scroll to the end of the exam pass and select your focus. The SSC Physics will promptly confirm the focus you have set.
After these steps have been successfully completed, you can then select the Master's programme in the course reservations.

APMG-A Foundations of Computational Science A (for graduates with pre-studies in natural science) (24 ECTS)
PN-NUM1 Compulsory Module Numerical Mathematics 1 (12 ECTS)
262001 VO en Numerical Mathematics 1
262002 UE en Numerical Mathematics 1 - Exercises
PMG-PA Compulsory Module Programming and Algorithms (12 ECTS)
PROG Compulsory Module Programming (6 ECTS)
051020 VU de en Programming 2
PLC Compulsory Module Programming Languages and Concepts (6 ECTS)
051030 VU en Programming Languages and Concepts

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MA CS study program: recommended path

Depending on previous studies:

- Natural sciences: Path A
- Mathematics: Path B
- Computer Science: Path C

1st Semester 30 ECTS			2nd Semester 30 ECTS	3rd Semester 33 ECTS	4th Semester 27 ECTS
Path A	Path B	Path C			
Numerical Mathematics 1 PM-NUM1 (12 ECTS)	Programming & Algorithms PMG-PA (12 ECTS)	Numerical Mathematics 1 PM-NUM1 (12 ECTS)	Numerical Mathematics 2 PM-NUM2 (8 ECTS)	Academic Skills & Ethics PM-ASE (3 ECTS)	Master's Thesis (25 ECTS)
Programming & Algorithms PMG-PA (12 ECTS)	Computational Natural Sciences WMG-NAT (12 ECTS)	Computational Natural Sciences WMG-NAT (12 ECTS)	Algorithms & Data Structures PM-ADS (4 ECTS)	Specialisation PM-SPEC (20 ECTS)	
Data Science (6 ECTS)			Advanced Comp. Science PM-ACS (18 ECTS)	Extension PM-EXT (10 ECTS)	Defensio (2 ECTS)

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Questions

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Tours through the house and library

- Meeting point: Aula
- Two groups, one starting at 5:30pm, one at 6pm
- If you want to attend: put your name on the list in front