

**TECHNOLOGY** 

# PhD at TU Graz: DocSchool

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Representatives of the Doctoral School of Physics

20. January 2025



## What are you gonna hear:

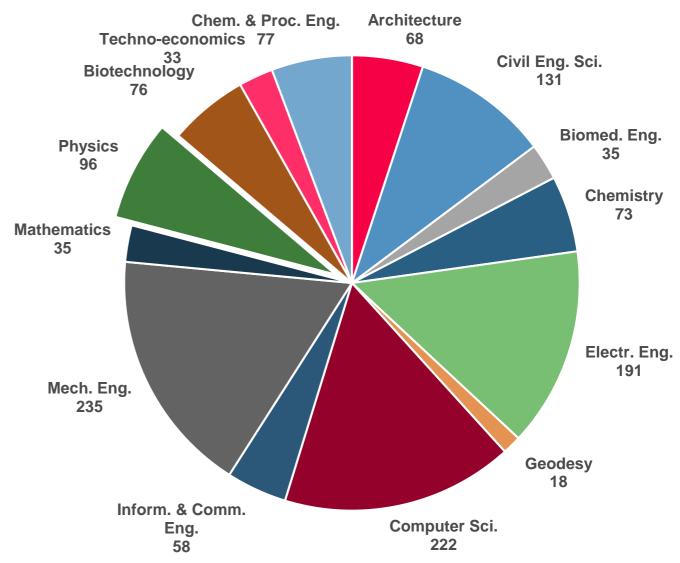
- PhD at TU Graz
- Curriculum & Statutes
- Timeline of your PhD
- Tips & Tricks
- What makes a good PhD journey
- Questions, discussion

## Please ask questions right away!



#### PhD students at TU Graz

- ~1300 PhD students
- 14 DocSchools
- 2 Curricula
  - Natural sciences
  - Technical sciences
- 3 contract forms
  - University Project Assistant
  - University Assistant
  - No university contract
- Average duration: 3-5 years



Data from 2024



## **University Law**

#### Statutes of TU Graz

## Curriculum (Dr. techn. or Dr. rer. nat.)

# Architecture Biomed. Eng. Chem. & Proc. Eng. Chem. & Proc. Eng. Computer Sci. Geodesy Electrical Eng. Mathematics Mathematics Biotechnology Physics Techno-economics



## Where to get information?

DSP part of TU website: <a href="https://www.tugraz.at/studium/studienangebot/doktoratsstudien/doctoral-school-physik">https://www.tugraz.at/studium/studienangebot/doktoratsstudien/doctoral-school-physik</a>

Curriculum, Statutes, contacts (or Google: doctoral school physics tu graz

Maintained by: communications

• IU4U. http://dtp.tugraz.at/regulations.html

Curriculum, Statutes, basically every other form (also see Timeline part of this presentation)

Maintained by: Dean's office!

Faculty website: <a href="https://mpug.tugraz.at">https://mpug.tugraz.at</a>

Contacts
 Maintained by: Dean's office

• DSP website: <a href="https://dsp.tugraz.at">https://dsp.tugraz.at</a>

News, less official forms, Maintained by: Coordination Team latest changes in regulations

The DSP coordination team



# Hard Facts: Curriculum & Statutes



## Curriculum (new in 2024)

- University wide
- Valid for all PhD students
- Contains:
  - Admission, curricular workload, and period of study
  - Doctoral Schools
  - Rights and Duties of Supervisors and Students
  - PhD Thesis regulations
  - Instructional Classes
  - Thesis Defence
  - Overall Assessment

#### **Graz University of Technology**



#### Curriculum of the Doctoral Programme in Technical Sciences

Curriculum version of 2024

The changes to this curriculum for the Doctoral Programme in Technical Sciences were approved by the Curricular Committee for Doctoral and Postgraduate Programmes at the meeting of 10 June 2024.

The Senate of Graz University of Technology issues the Doctoral Programme in Technical Sciences on the basis of the Universities Act 2002 (UG), originally published in the Austrian Federal Law Gazette (BGBI.) No. 120/2002 and applicable as amended, and the Excerpt of Statutes: Legal Regulations for Academic Affairs of Graz University of Technology.

Please note: the English version of this document is a courtesy translation. Only the German version is legally binding.



## Curriculum 2024 // Instructional classes

- 21 ECTS in total
  - 9-12 ECTS Subject specific courses
  - 4-7 ECTS Scientific Methods and Communication
    - 2 ECTS Scientific Methods + attending Colloquia
    - 2 ECTS <u>Doctoral Seminar = attend DocDay + present 2x</u>
    - 0-3 ECTS Soft-Skill courses (right now: only LV allowed!)
  - 2 ECTS Privatissimum

930.001	Fundamental and Applied Research: Third-Party Funding, Grant Proposal
	Collaboration, Resources and Impact
930.002	Inventions, Patents, and Technology Exploitation
940.085/086	Scientific Writing Skills for Master and PhD students
940.090/091	Scientific Presentation Skills for Master and PhD students
940.900	Writing Competence – A Success Factor
940.930	Finding Scientific Literature and Publishing your Texts
940.940	Successful Teamwork in Projects
940.941	Conflict Management
940.942/943	Communication Styles, Discussion Techniques and Rhetorics
940.950	Leadership
940.960	Diversity Management
940.965	Intercultural Social Competence for Work and Life
ያዘን <b>S</b> teenties	Self-Organization, Time Management and Working Techniques





An das / To Dekanat der Fakultät für Mathematik, Physik und Geodäsie Studienrichtung Physik / Study Programme Physics

#### Meldung fachspezifische Basisfächer\* für das Studienjahr /

Report subject specific basic courses\* for the academic year

\*8 Semesterstunden (SSt) sind verpflichtend / 8 semester course hours (SSt) are obligatory

FAMILIENNAME, Vorname(n) I Surname, given name				
Matrikel-Nr. I Registration number	Studienkennzahl / Study Code			
Beginn Doktoratsstudium I Beginning Doctoral Programme				

Aktuelles Studienjahr / Current academic year:

LV-Nr. / Course no	LV-Titel / Course title	SSt	LV-Typ / Course type	Studienplanzuordnung / Curriculum version

#### Vergangene Studienjahre I Past academic years:

LV-Nr. / Course no	LV-Titel / Course title	SSt	LV-Typ / Course type	Studienplanzuordnung / Curriculum version
		8,00		

	Unterschriften / Signatures	Datum / Date
Doktorandin I Doctoral Student Betreuerin I Supervisor		
Wird vom Dekanat einge Studiendekanln / Dean of Studies	holt / To be collected by the Dean's Office	
*) Gesetzliche Grundlage / Leos/	basis	

Curriculum für das Doktoratsstudium der Technischen Wissenschaften / Naturwissenschaften und Statuten der Doctoral School Physik urriculum for the Doctoral Programme in Technical / Natural Sciences and Statutes of the Doctoral School of Physics

Markus Aichhorn, Robbit Steentjes January 20, 2025



#### Curriculum 2024 // Thesis & Examination

- You will have to write a thesis
- At least 1 external examiner
  - (= outside of TU Graz, but stricter rules in Statutes!)
- 'Normal' thesis, or 'cumulative' thesis
  - (= collection of multiple publications with added chapters for context)
- Will be published (by TU) by default. Exceptions are possible (but sometimes complicated)
- The PhD defense consists of
  - a presentation by the student plus public discussion
  - an oral examination by the examiners



## DocSchool // Organisation

Coordination Team:

Head: Markus Aichhorn

Deputy head: Peter Hadley

Student representatives: Elena Unterleutner

Robbin Steentjes

Lukas Fürst

Robert Schwarzl

Next election of student representatives: 2026

If you are interested: Get in touch with the student representatives!



## Statutes (to be updated 2025)

- Valid for DSP students only
- Contains more specific rules for:
  - Its own organisation structure
  - Member institutes
  - Publication requirements
  - Examiner requirements
  - Curricular workload
  - Mentoring
  - Doctoral exam

#### Statutes of the Doctoral School of Physics

The curriculum for the Doctoral Programme in Engineering Sciences at Graz University of Technology and the curriculum for the Doctoral Programme in Natural Sciences shall apply in their currently valid version.

#### Governing Body Responsible for Study Regulations

The governing body responsible for study regulations at the Doctoral School of Physics is the Dean of Studies responsible for the bachelor's and master's degree programmes in Technical Physics.

#### Objective of the Doctoral Programme

Beyond pre-professional education and training, the objective of the Doctoral Programmes in Engineering Sciences or Natural Sciences at Graz University of Technology is for students to acquire the ability to undertake consolidated, independent scientific work in the field of physics.

#### Academic Degree



## Mentoring

All the students have the right to have a mentor A mentor is not your daily supervisor

New curriculum:

Encourages everybody to get a mentor. Measures to enhance this are discussed.

If you want a mentor: Get in touch with the coordination team



## Data Management Plan

- Rules from the faculty
- All PhD students should have a DMP
- "All data (and code) that is needed to reproduce results published in the thesis needs to be available for at least 10 years after publication."
- FAIR principles
  - Findable, Accessible, Interoperable, Reusable
- There are courses available to help you
- Useful for others AND for yourself



#### **TU Graz RDM Policy:**

Faculty-specific Implementation Strategy Mathematics, Physics and Geodesy

v1.2 (20.5.2022)

If you are not convinced that this is necessary, here is a 5 minute video worth watching:

https://www.youtube.com/watch?v
=N2zK3sAtr-4



#### Travel funds

UA: 1500 EUR/yr

• Everybody: 1200 EUR in total

Many other scholarships

Travel reporting tips:

Apply before you go

• Save every invoice, bill, email...

Report as soon as possible

(University)
(DocSchool) (get in touch with <a href="mailto:aichhorn@tugraz.at">aichhorn@tugraz.at</a>)
(National, EU, Private, event-specific)



## DocDays

Twice a year, joint with DocSchool@UniGraz:

Last week of February: two-days event 26. and 27. 2. 2025

Last week of September: Retreat-style event with student organisers.

Two participations necessary:

- In the first year: Presentation of the PhD topic
- Last year: Oral presentation about the results

Everybody is encouraged to participate at all DocDays!



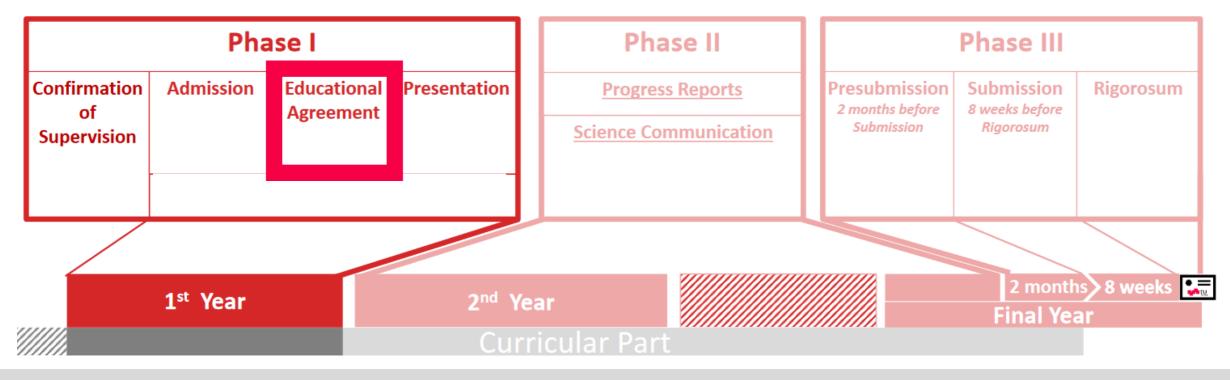
# Timeline of your PhD

This is a summary of forms and regulations found at <a href="http://dtp.tugraz.at/regulations.html">http://dtp.tugraz.at/regulations.html</a>



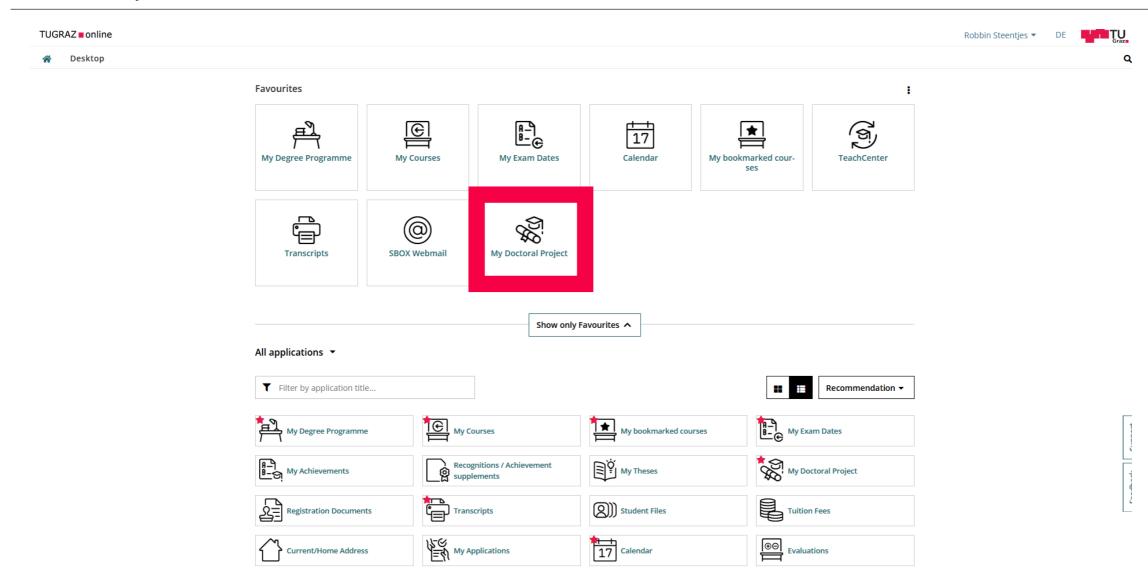
#### Phase I Phase II Phase III Confirmation Admission Educational Submission Rigorosum **Progress Reports** Presubmission Yearly reflexion about 2 months prior to At least 8 weeks of Agreement · Progress in own PhD submission prior to Rigorosum PhD proposal written in Sign up at Supervision Development of personal and Academic accordance with supervisor Written professional competences Notification of Deadline is Defence of thesis Advisory Service. agreement of · Plan of next year reviewers by the extended in case of in front of exam-Needed: supervisor public holidays or student and ination board Appropriate **Publications Conferences** Presentation supervisor. lecture-free 30 minutes degree certificate, Presentation of PhD proposal Written communication of Presentation of Submission of periods. In case of presentation Confirmation of and working plan within Doc scientific results in scientific results in scientific preliminary form of doubt ask at the 10 minutes supervision, School as a poster at the Doc journals environment dissertation to Dekanat questions Possibly further Days reviewers. regarding talk documents <= 60 minutes Chance to **Networking** examination of implement Form collaborations within your institute, TU Graz, reviewer's feedback the board your scientific community before submission 2 months 8 weeks 2nd Year 1st Year **Final Year Curricular Part**





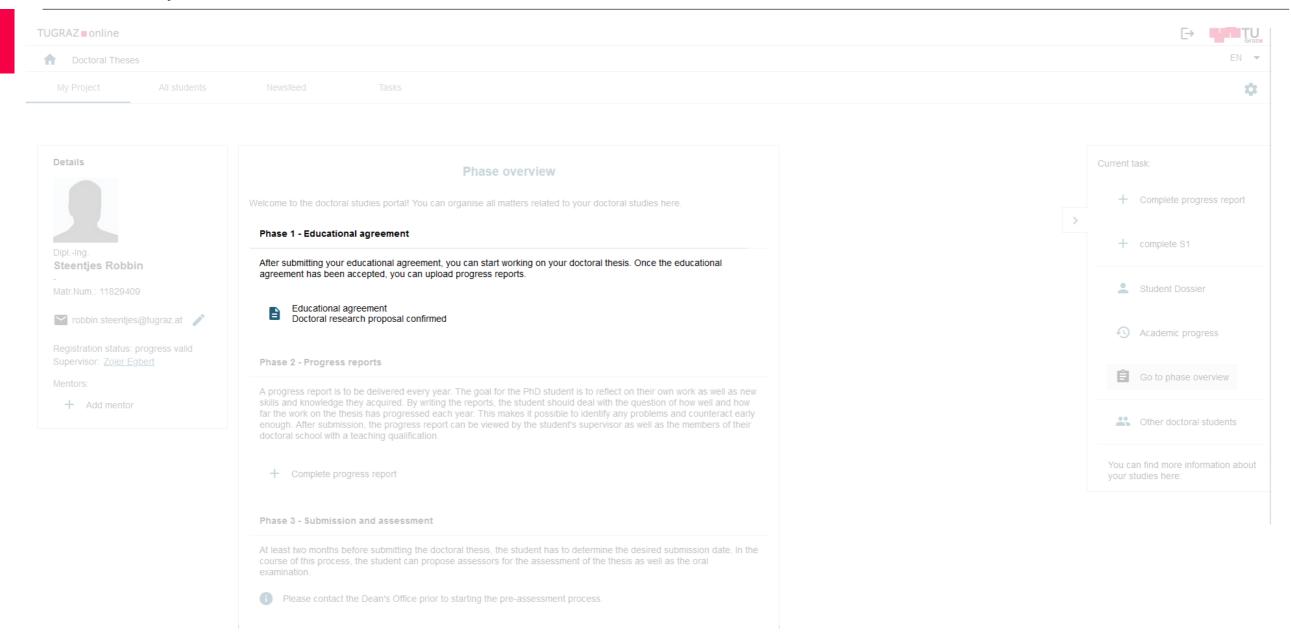
#### Timeline of your PhD





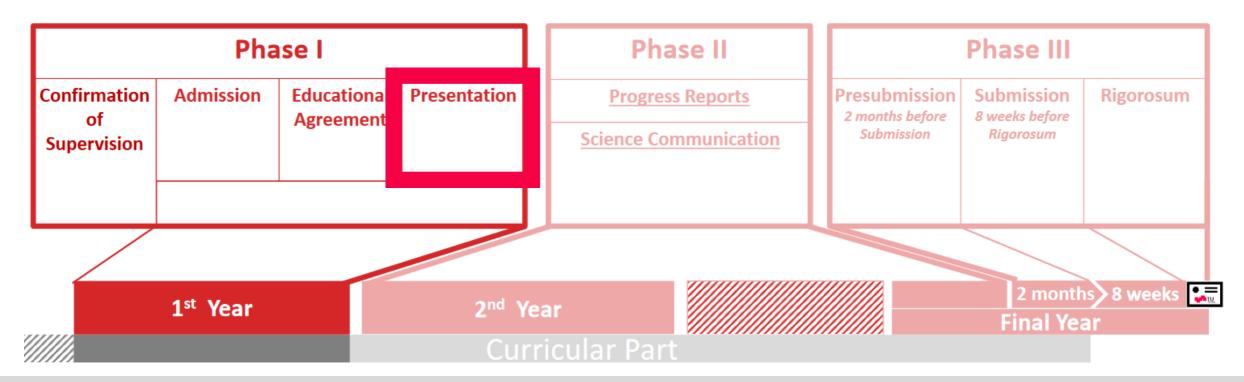
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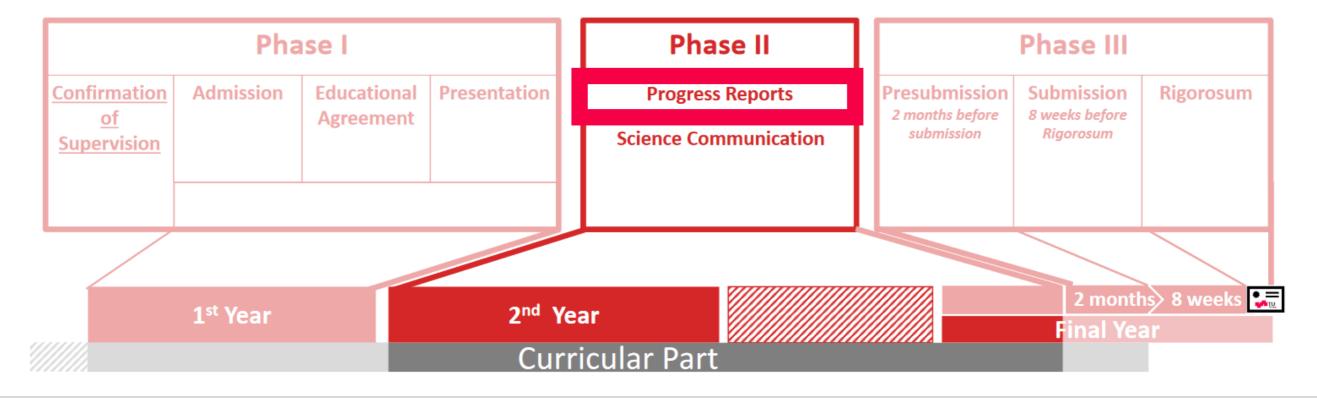




Next DocDay: 26. and 27.2.2025 talks from nearly finished students posters from beginning students

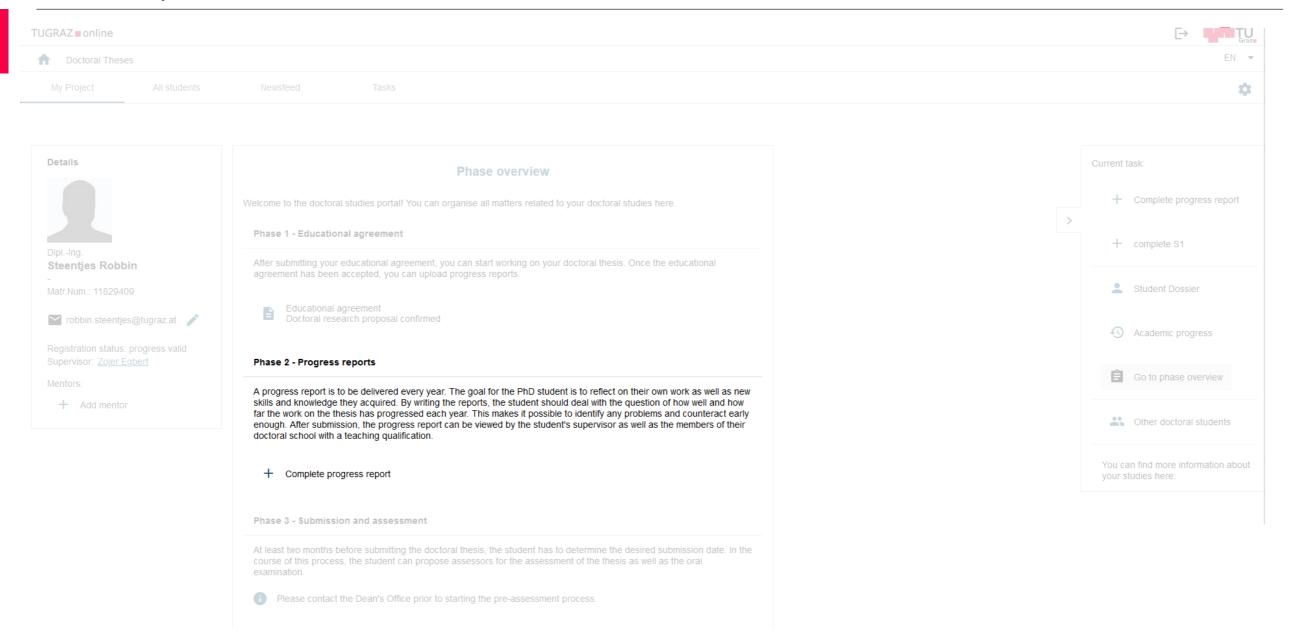




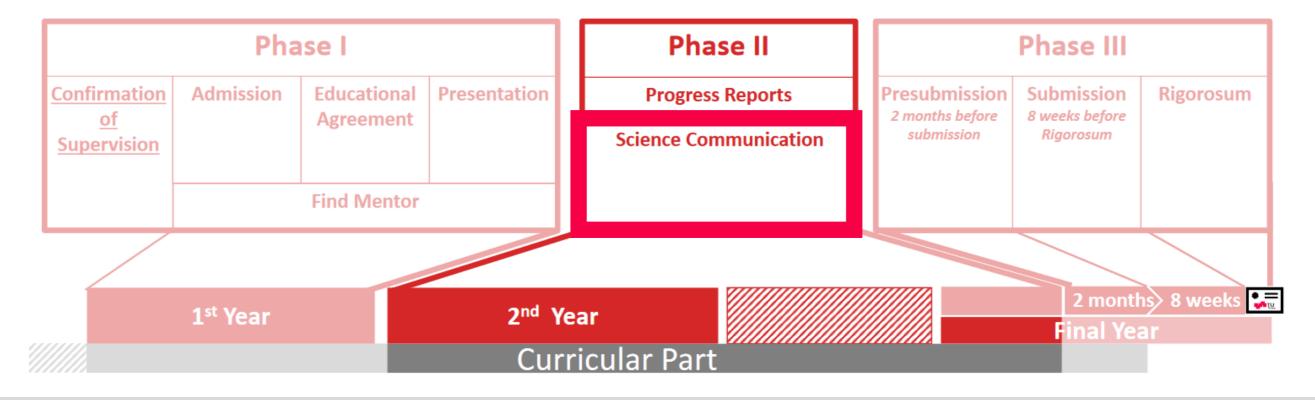


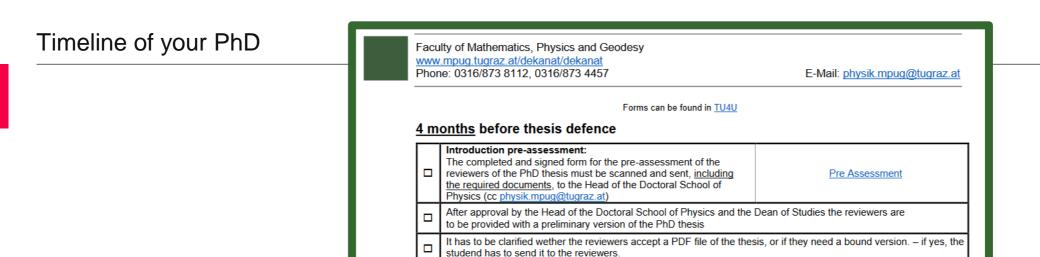
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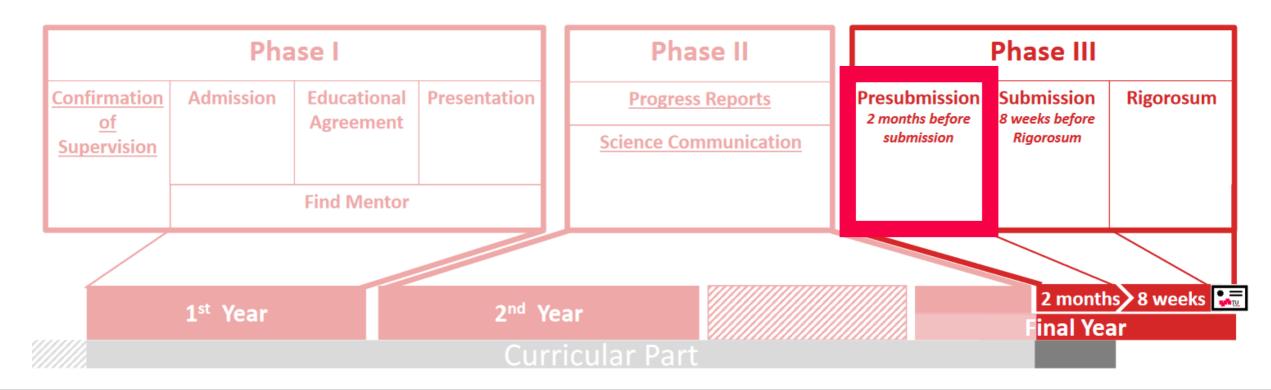




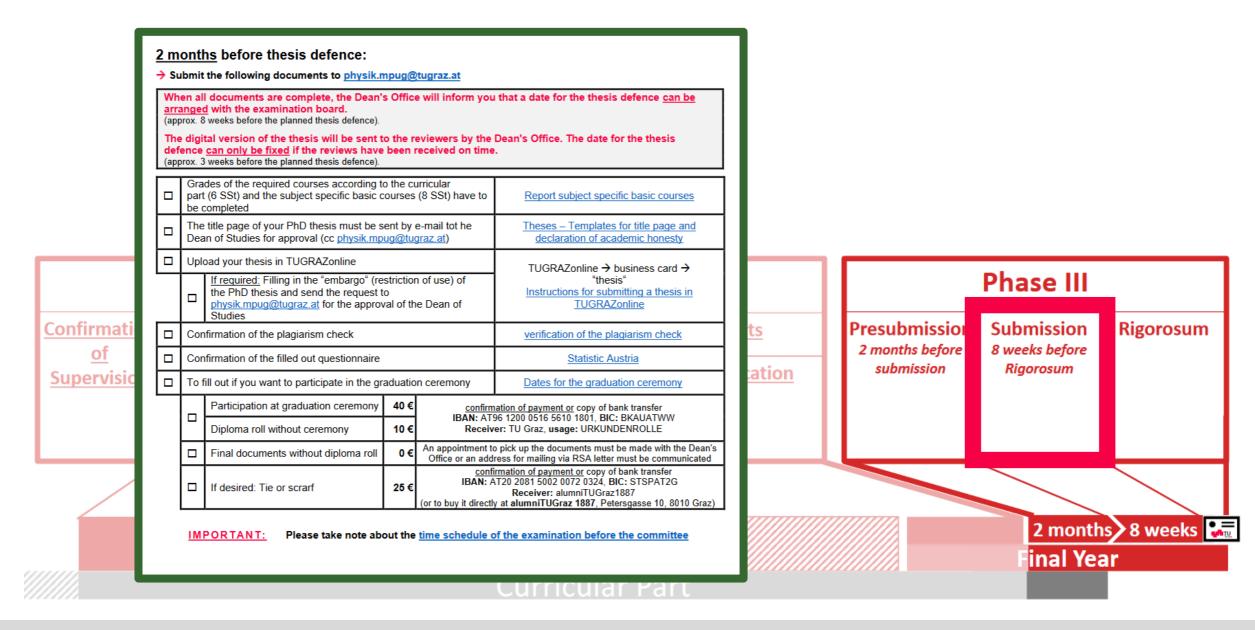




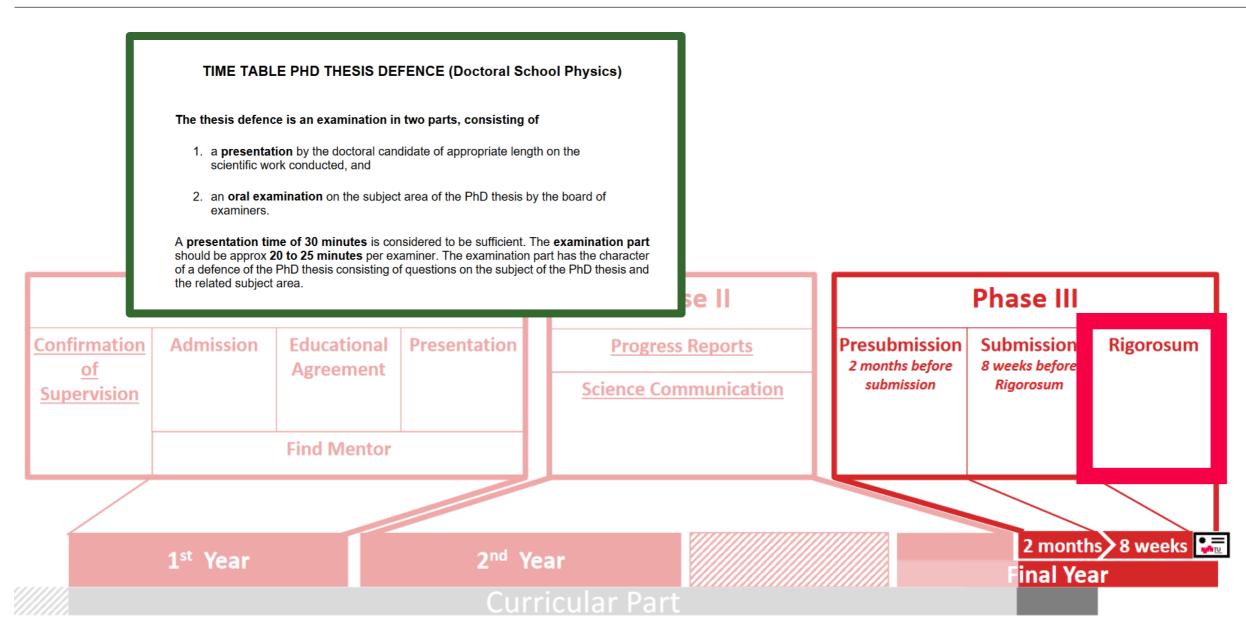














# Tips and tricks

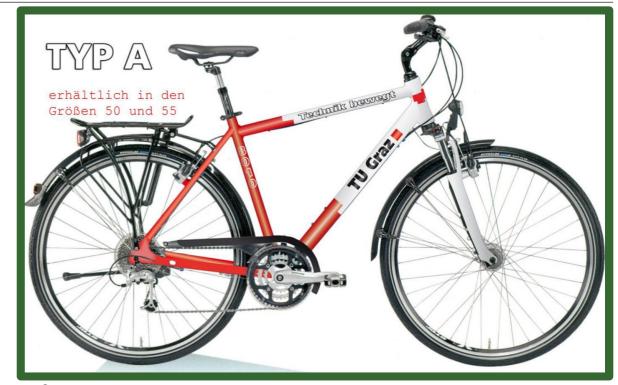


#### Student

- Student discounts
- Student events
- Student help & organisations
- Free courses
- University Sports (KFU)
  - https://sportinstitut.uni-graz.at/de/

#### Employees:

- TU Graz bicycle, discounted public transport tickets & more
- Gebäude und Technik: Equipment
- Works council (BRwiss) discounts and benefits





#### TU Graz infrastructure

- PhiLab, FabLab
- 3D printing, laser cutting
- Carsharing
- Copyshop
- In-house training
  - Leadership
  - Teaching
  - First-aid
  - Scientific skills





## Tips for a good PhD journey (from a supervisor...)

Research and science is a collaborative effort

Individual researcher in a (smaller or bigger) research group

Be initiative! There should be give and take

Make the PhD project yours!

Build up a network, be it inside or outside academia.

Take care of yourself and your environment!



## Take care of yourself!

Being and staying healthy is very important

Physical: Sport courses at USI Graz, take care to get time off.

Mental health: Difficult to spot and to accept

Look after each other

Harassments: It is NOT okay!

It is NOT normal!

It does NOT happen to everybody!

You are NOT alone!

Ombudsstelle for students, Mentor, AKG, Betriebsrat

Measures: Coaching for TU Graz staff, psychosoziale Beratung der HTU

Barrierefreies Studieren und Arbeiten, Arbeiterkammer



## Get in Touch!

- Doctoral School of Physics
  - Contacts: <u>aichhorn@tugraz.at</u> <u>elena.unterleutner@tugraz.at</u>
- PhD Union
  - Contact: <u>doktorat@htugraz.at</u>
  - Social & career activities
  - Help with issues
  - Wants to make your life as PhD better
- Dean's office
  - Contact: <a href="mailto:physik.mpug@tugraz.at">physik.mpug@tugraz.at</a>





# Questions



## Statutes // Publication requirements

#### Requirements:

- At least 1 publication on the subject of the thesis in an internationally refereed scientific journal.
- If no such publication exists, three reviewers for the thesis are needed.
  - This rarely happens. Contact us asap if you plan to finish the doctorate this way.
- Preferably, 1 first-author publication (but this is no hard rule)

NATURE | NEWS

Physics paper sets record with more than 5,000 authors

Detector teams at the Large Hadron Collider collaborated for a more precise estimate of the size of the Higgs boson.

**Davide Castelvecchi** 

15 May 2015



#### Statutes // Cumulative dissertation

#### Requirements:

- Current: multiple publications
- New statutes: ~ 3 publications with significant author share (to be discussed and specified)

If you want to do that, get in touch with the Dean of studies well ahead of submitting the thesis.

Some external referees will not accept cumulative dissertations (anglosaxonian,...), others expect them (scandinavian,...). Consider that!



#### Statutes // External examiners

Must have a position at the home institution that allows to supervise PhD students.

Examiner is suggested by the candidate (and the supervisor), and appointed officially by the coordination team.

Examiner should join the exam onsite. Hybrid solution is also possible.



# Representative bodies



## **Doctoral School of Physics**

Elections for Student Representative!

- during/around next DocDay
- Call for candidates! (send an email to Markus, Robert, or me)
- help shape the DocSchool
- grow your network
- gain experience in (academic) management