# How to get through your studies in QST: legal aspects and specific information

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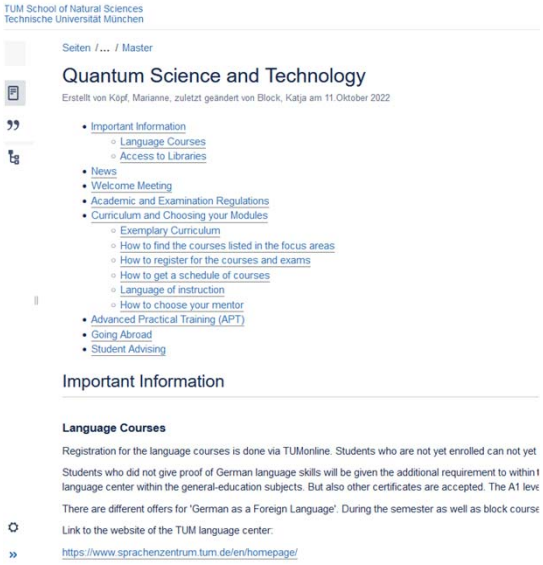
# Information about the Degree Programme (I/II)

Link Website TUM NAT

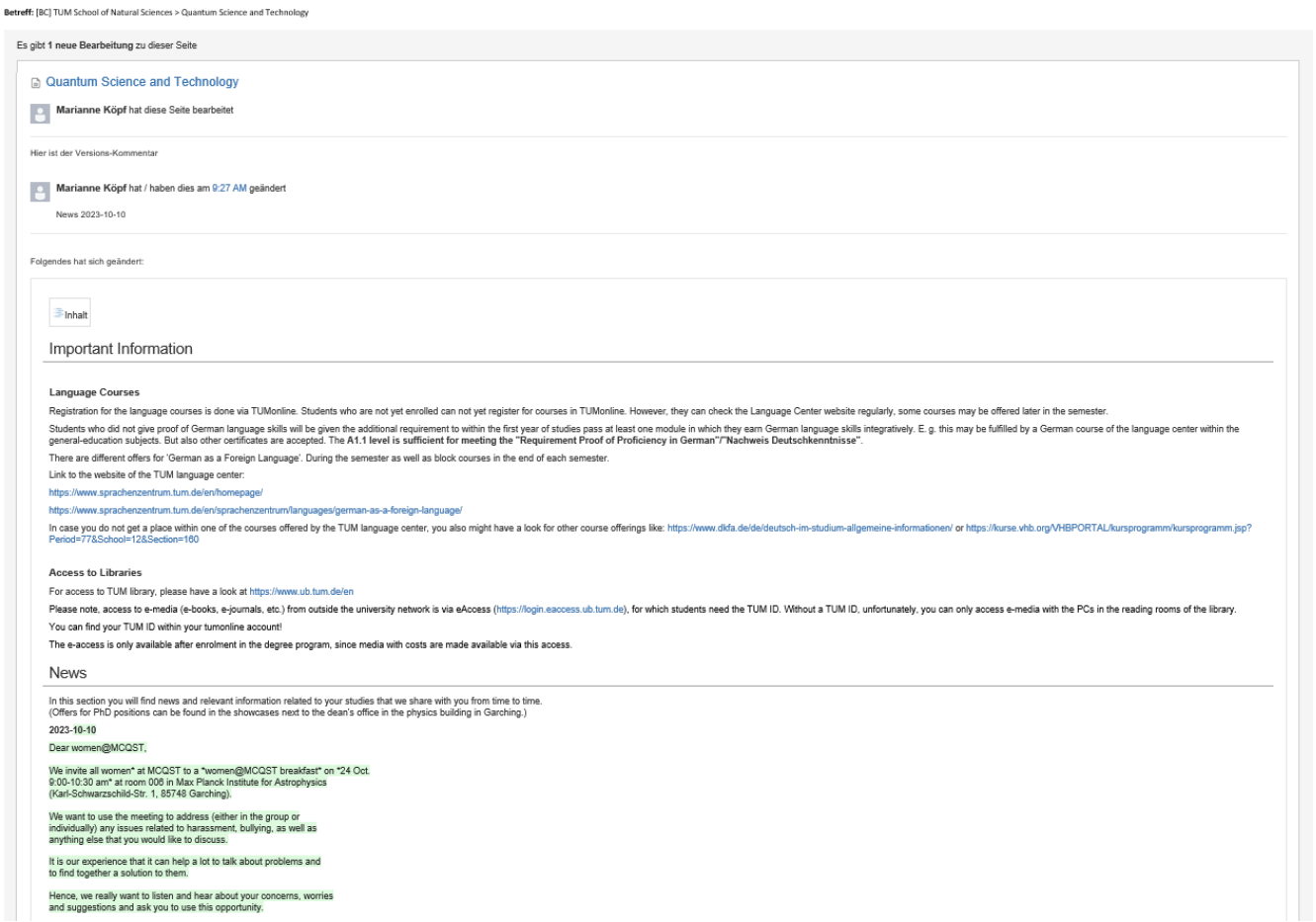

Link Wiki QST

=> „Beobachten“

# Information about the Degree Programme (II/II)

[Link Wiki QST]

=> „Beobachten“



**Betreff:** [BC] TUM School of Natural Sciences > Quantum Science and Technology

Es gibt **1 neue Bearbeitung** zu dieser Seite

Quantum Science and Technology

**Marianne Köpf** hat diese Seite bearbeitet

Hier ist der Versions-Kommentar

**Marianne Köpf** hat / haben dies am 9:27 AM geändert

News 2023-10-10

Folgendes hat sich geändert:

Inhalt

## Important Information

**Language Courses**

Registration for the language courses is done via TUMonline. Students who are not yet enrolled can not yet register for courses in TUMonline. However, they can check the Language Center website regularly, some courses may be offered later in the semester.

Students who did not give proof of German language skills will be given the additional requirement to within the first year of studies pass at least one module in which they earn German language skills integratively. E. g. this may be fulfilled by a German course of the language center within the general-education subjects. But also other certificates are accepted. The **A1.1 level is sufficient for meeting the "Requirement Proof of Proficiency in German"/"Nachweis Deutschkenntnisse"**.

There are different offers for 'German as a Foreign Language'. During the semester as well as block courses in the end of each semester.

Link to the website of the TUM language center:

https://www.sprachenzentrum.tum.de/en/homepage/

https://www.sprachenzentrum.tum.de/en/sprachenzentrum/languages/german-as-a-foreign-language/

In case you do not get a place within one of the courses offered by the TUM language center, you also might have a look for other course offerings like: https://www.dkfa.de/de/deutsch-im-studium-allgemeine-informationen/ or https://kurse.vhb.org/VHBPORTAL/kursprogramm/kursprogramm.jsp?Period=77&School=12&Section=160

**Access to Libraries**

For access to TUM library, please have a look at https://www.ub.tum.de/en

Please note, access to e-media (e-books, e-journals, etc.) from outside the university network is via eAccess (https://login.eaccess.ub.tum.de), for which students need the TUM ID. Without a TUM ID, unfortunately, you can only access e-media with the PCs in the reading rooms of the library.

You can find your TUM ID within your tumonline account!

The e-access is only available after enrolment in the degree program, since media with costs are made available via this access.

## News

In this section you will find news and relevant information related to your studies that we share with you from time to time.
(Offers for PhD positions can be found in the showcases next to the dean's office in the physics building in Garching.)

**2023-10-10**

Dear women@MCQST,

We invite all women* at MCQST to a "women@MCQST breakfast" on *24 Oct.
9:00-10:30 am* at room 006 in Max Planck Institute for Astrophysics
(Karl-Schwarzschild-Str. 1, 85748 Garching).

We want to use the meeting to address (either in the group or individually) any issues related to harassment, bullying, as well as anything else that you would like to discuss.

It is our experience that it can help a lot to talk about problems and to find together a solution to them.

Hence, we really want to listen and hear about your concerns, worries and suggestions and ask you to use this opportunity.

# Academic and Examination Regulations (FPSO)

- The **Academic and Examination Regulations (FPSO)** are together with the General Academic and Examination Regulations (APSO) the contract you signed with the university at the time of enrolment. It is very important that you are familiar with the contents of these regulations.

  https://www.tum.de/fileadmin/user_upload_87/gi32rab/Quantum_Science___Technology_MA_LF_2._AS_15122022.pdf

# Degree Chart/Curriculum

| | Semester | CURRICULUM | | | Credits |
|---|---|---|---|---|---|
| Study phase | 1. | QST Theory: Quantum Information<br>mandatory<br>10 CP | | QST Experiment: Quantum Hardware<br>mandatory<br>10 CP | Two focus areas<br>Experimental Quantum Science & Technology or Theoretical Quantum Science & Technology<br>elective<br>10 CP | 30 |
| | 2.<br>Mobility window | Advanced Practical Training<br>mandatory<br>6 CP | General education subjects<br>elective<br>4 CP | Two focus areas:<br>Experimental Quantum Science & Technology or<br>Theoretical Quantum Science & Technology<br>elective<br>20 CP<br>New: Special Topics | | 30 |
| Research phase | 3. | Master's Seminar<br>mandatory<br>15 CP | | Master's Work Experience<br>mandatory<br>15 CP | | 30 |
| | 4. | Master's Thesis<br>30 CP | | | | 30 |
| | Legend: | light grey = required modules semester 1 and 2<br>dark grey = General education subjects<br>light blue = Electives catalogue with two focus areas<br>dark blue = Research year (Master's seminar, Master's practical training and Master's thesis) | | | | |

# QST Theory: Quantum Information
# QST Experiment: Quantum Hardware

- Mandatory modules, of which you must pass one within the first two semesters. The exams are only offered in winter semester.

  That means **you have to pass one of the two modules within the first exam or the repeat exam.**

  If you fail to do so, you will be disenrolled at the end of the second semester.

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# Focus Areas (I/II)

- You have to do minimum 30 credit points in the focus areas.

- There are two focus areas:
  - Experimental Quantum Science & Technology
  - Theoretical Quantum Science & Technology

All offered modules are listed on the website

https://www.nat.tum.de/en/nat/studies/msc/quantum-science-and-technology/elective-courses/

You may choose **freely** over all focus areas. To ensure a broad coverage of topics a consultation by a mentor is recommended and required to enter the research phase. => One Exception: see next slide!

# Focus Areas (II/II)

- From the catalog Special Topics in QST you may choose **one** module maximum.

| Module code | Title | Module responsible |
|---|---|---|
| NAT5006m | Quantum Semiconductor Nanostructures and Devices | |
| NAT5008m | Current Topics in Quantum Networks | Reiserer, Andreas |
| NAT5018m | Entanglement in Many-Body System | Pollmann, Frank |
| NAT5020m | Advanced Topics in the Theory of Quantum Matter | Knap, Michael |
| NAT5027m | Entanglement and Correlations in Multipartite Systems | Kraus, Barbara |
| NAT5029m | Quantum Science and Technology in Solids: spins, microwaves, and optomechanics | Hübl, Hans-Gregor |
| NAT5030m | Cavity-, Circuit- and Waveguide QED | Rabl, Peter |
| NAT5032m | Verification and Characterization of Quantum Devices | Kraus, Barbara |
| NAT5040m | Seminar: Topics of Quantum Computing (IN2107,IN2183,IN0014) | Huang, Qunsheng |
| NAT7019 | Modern Topics in Condensed Matter Physics | |
| PH1322 | Superconducting Quantum Circuits | Gross, Rudolf |

# Mentor Counseling

- Make sure you have an idea of which of the modules you are interested in before contacting a mentor. A mentor will help you to review the individual study plan you have considered (selected modules).
- Take the counseling within the first weeks of lecture time
- The discussed individual curriculum is not definitive, you can change your choice of modules later on. You also might change your mentor during your studies.
- Choose a mentor, your mentors are listed on following website https://www.nat.tum.de/nat/studium/msc/qst/mentoren-1/
- You must submit a Mentor-Consulting Interview form when you register for the research phase https://www.moodle.tum.de/course/view.php?id=90300

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# APT – Advanced Practical Training

- a selection of tasks offered and supervised by the experimental and theoretical research groups participating in the QST Master's program.
- gaining some familiarity with the research interests of the associated research groups, thus facilitating future decisions regarding choices of specialization or topics for Master's theses.
- Depending on its topic and scope, a task is worth either 1 or 2 units. The corresponding contact hours are 10 hours and the total workload are 30 hours per unit.
- Students have to complete tasks with a combined value of 6 units. At least 2 units must stem from experimental tasks and at least 2 from theoretical ones.

For further information, please have a look on the module description - > Link
See also our website -> Link

# General Education Subjects

- At least 4 credit points
- Elective courses – please see:
  https://www.nat.tum.de/en/nat/studium/org/faq/studium/softskills-ph/

  choose for example from TUM School of Managment, the Carl-von-Linde Academy or the Language Center
- **To take an exam: register in TUMonline!**
- *Those who still have to prove their knowledge of German can take a German course at the TUM Language Center, which can also be considered a general education subject.*

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# Going Abroad

**Dr. Maria Eckholt**
International students, going abroad
General courses' issues and soft skills

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Tel.: +49 (0)89 289 14461
Office: PH 2053
Tue. and Thu. 9:30 – 11:30 am

*If you go abroad during your first semester, you have to make sure, you participate and pass one of the exams of the two mandatory modules!*

- Detailed Information about possibilities for a stay abroad (e.g. ERASMUS, TUMexchange)

  https://www.nat.tum.de/en/nat/studies/global/

  TUMexchange application deadline October 31 (10 a.m.)

  Erasmus+ application deadline January 12, 2023 (at 12 noon)

- To follow international activities of the physics department – **Blog**

  https://wiki.tum.de/pages/viewrecentblogposts.action?key=tumphinternational

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# Research Phase

- One **inseparable** entity (only formally divided into parts)
- One year of research in a group of LMU or TUM or Institutes like WSI, WMI, MPQ or similar
- Find a supervisor during the first year.
  (Please, see also the list of possible thesis supervisors on the website)
- **Register at the beginning of the research phase**
- Additional information event in the summer semester

It is possible to do the research phase or parts of it in industry or other research insitutes or universities. Please, mind "External" Final Theses or Research Phases in Physics Programs - TUM School of Natural Sciences.

# And now… some more regulations

# Exams

- To take an exam **you must register in TUMonline!**
  (There will be an information e-mail when the registration starts.)
- Best way to register an exam is via „Curriculum“.
- Only passed exams will be listed in the final transcript.
- There is no limit to the number of attempts for failed exams.
  **Exception: mandatory modules QST Theory (PH1010) and QST Experiment (PH1009).** You must pass one within the first semesters, otherwise you will be disenrolled by end of the second semester!
- **Passed exams can not be repeated! That is part of your FPSO.**

# Deadlines – I/II

**Exam registration periods**

- Examinations normally take place accompanying the corresponding semester of study. Each module has two examination dates within an academic year.
- Regularly there are two time periods for module exams at TUM. The first follows immediately the lecture period, the second is just before the lecture period of the following semester begins. The exact dates for the current and following semesters are given on the Website TUM NAT.
- The registration periods are defaults – please keep in mind that there might be small deviations and possibly different dates in other departments
- There will be an information e-mail when the registration periods start.

# Deadlines – II/II

**Re-registration**

- Do not forget to **re-register for the next semester**

  Deadlines: **February 15 for summer semester**
  **August 15 for winter semester**

# Academic progress check (FPSO)

- Academic progress check (“not more than one year behind“)
  - by the end of the 3rd semester: 30 credit points
  - by the end of the 4th semester: 60 credit points
  - by the end of the 5th semester: 90 credit points

*Attention!*

*1 Credit Point at TUM equals a workload of 30 hours for an average student. => For a 10 CP module the workload is 300 hours!*

# Registration for courses

- Not mandatory, but useful.
- Professors can contact students.
- Course will appear in your TUMonline-shedule.
- Access for online material may be coupled to registration.

# Additional requirement for integrative German skills

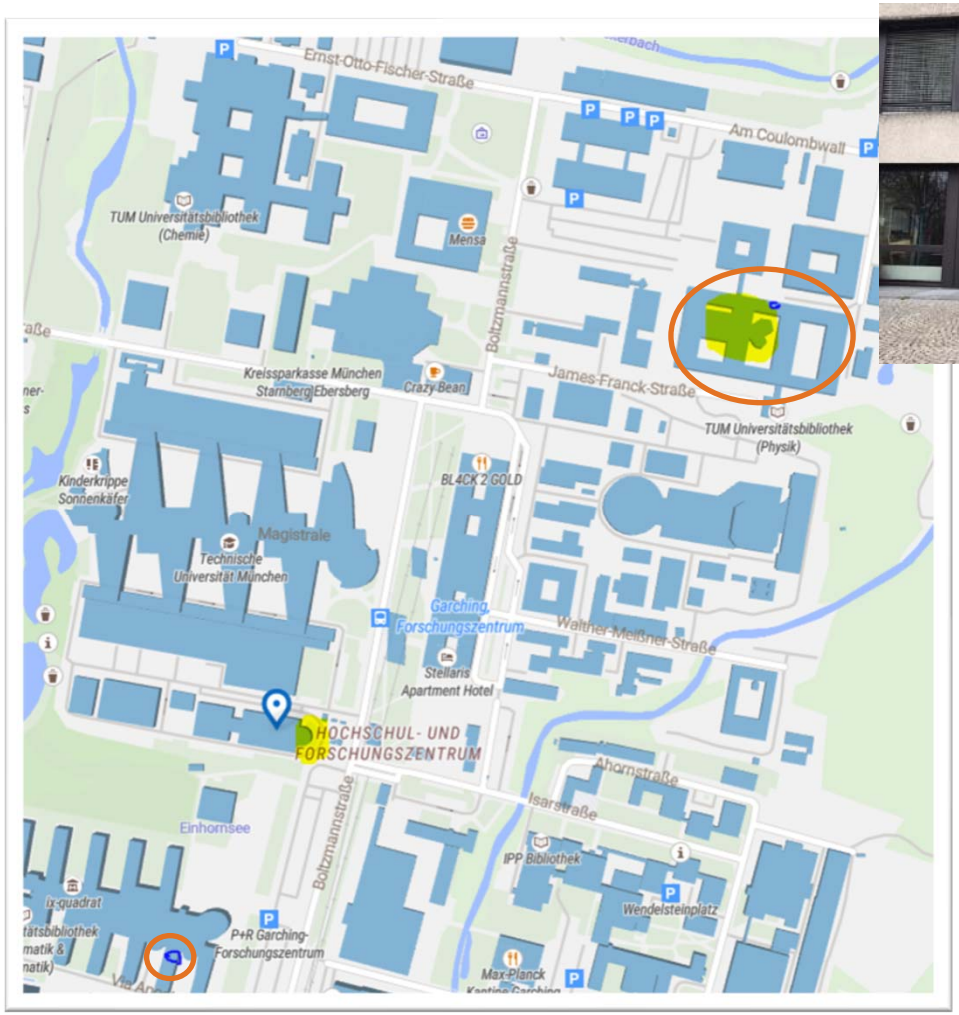
- To be admitted into QST you do not need to provide proof of German language skills.
- Students who did not give proof of German language skills will be given the additional requirement to within the first year of studies pass at least one module in which they earn German language skills integratively.
- E. g. this may be fulfilled by a German course of the language center within the general-education subjects. But also other certificates are accepted.
- The A1 level is sufficient.

# Additional Courses

- You might take other modules (optional courses) than mentioned in your curriculum
- They do not count into your degree program! – Neither the grades nor the amount of CP
- They will be listed in the appendix of your transcript of records
- If you do some at LMU, please send the “Scheine” to studium@nat.tum.de and ask to add them to your grade report

# Welcome Event and Lecture Halls of the Physics Building

Friday, October 13
9.00-12.00 a.m.
Lecture Hall No. 2




Office
Marianne Köpf

# How to… register for courses and exams

## Courses

TUM: TUMonline LMU: LSF

**The LMU-registration period for courses is from 01.10.2023 - 19.10.2023.**

## Exams

TUM+LMU: via Study Status/Curriculum in TUMonline → This is important!

For „Freifächer/Optional Courses (not part of QST)“ TUMonline (only here via „exam“)

Exams - Docs - BayernCollab (dvb.bayern)

# Some more information/advices/etc.

Our Advice and Counselling Network: Studierendenwerk München Oberbayern (studierendenwerk-muenchen-oberbayern.de)

https://www.nat.tum.de/en/nat/about/diversity/

https://www.zv.tum.de/en/diversity/home/

# Tutition Fees for non EU-students

Please, keep yourself updated!

https://www.tum.de/en/studies/fees/tuition

# Questions? - Academic Counseling

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**If you have questions or problems... Let us know!**

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You may make an appointment via Moodle
https://www.moodle.tum.de/course/view.php?id=90475