



TECHNISCHE  
UNIVERSITÄT  
DARMSTADT

# Principles for Academic Study and Teaching<sup>\*</sup>

at Technical University of Darmstadt



## Content

<b>1</b>	<b>Preliminary remarks</b>	3
<b>2</b>	<b>The Principles for Academic Study and Teaching</b>	4
2.1	High academic quality in study and teaching	5
2.2	Student-centred	6
2.3	Personal development as human beings	6
2.4	Establishing a culture of openness	7
2.5	Appreciative interpersonal interaction	7
2.6	Good studiability	8
<b>3</b>	<b>Putting the Principles for Academic Study and Teaching in concrete form and practice</b>	9
3.1	High academic quality in study and teaching	9
3.2	Student-centred study and teaching	12
3.3	Personal development as human beings	12
3.4	Culture of openness	13
3.5	Appreciative interpersonal interaction	16
3.6	Good studiability	17

## Preliminary remarks

The Principles for Academic Study and Teaching (*Grundsätze für Studium und Lehre*) result from extensive discussions at TU Darmstadt. Initially passed in 2009 and updated in 2022, these Principles take into account the long-standing positive developments at TU Darmstadt, address new national and global challenges and reflect the vision (*Selbstverständnis*) of TU Darmstadt regarding academic study and teaching.

With these Principles, TU Darmstadt establishes guidelines for structuring academic study and teaching. These guidelines define the aspired objectives. The quality objectives formulated are the basis for refining and advancing existing Bachelor's, Master's and Teacher Education degree programmes and for developing new ones. They are also the basis for refining and developing offers of continuing academic education.

These Principles for Academic Study and Teaching rely on the commitment of all stakeholders. They address the departments and fields of study of TU Darmstadt as organisational units, the members of the University, their various groups and the decision-making bodies.





## 2. The Principles for Academic Study and Teaching

The members of TU Darmstadt understand academic study to be a holistic process that is supported and configured by both the students and the teaching staff. In addition, they are committed to the indivisibility and freedom of research and teaching. This includes open-minded discussions among all parties with the respective bodies of knowledge (learning-based research) and their expansion through active participation (research-based learning).

High academic quality is the basis for all Principles for Academic Study and Teaching at TU Darmstadt that are presented here. It is our ambition that students graduating from our University are very highly qualified in their field of study on the latest state of the science. Our university teachers and lectures are excellent academic researchers in their respective fields. They provide students with technically and didactically competent, **student-centred** teaching from the beginning of their studies to their graduation.

Academic study and teaching at Technical University of Darmstadt are greatly influenced by our underlying vision to assist students in their **personal development as human beings**, to encourage **appreciative interpersonal interaction**, to foster a **culture of openness** and to ensure good **"studiability"** (*Studierbarkeit*).

### 2.1 High academic quality in study and teaching means that:

- In their studies, our students receive an academic education based on the most current theories, knowledge and methods.
- Our students learn how best to acquire new knowledge.
- Our students develop the skills of methodological research and learn how to transfer theoretical knowledge to practical research.
- Our students acquire fundamental facts, concepts and methods of their field of study.
- Our graduates are not only able to choose between existing concepts and methods appropriately, but they also have the knowledge and ability to formulate new questions from which to develop innovative concepts and methods to solve them.
- Our graduates are familiar with the principles of good research practice.
- Our graduates can present scientific ideas, approaches and solutions clearly, both in writing and orally.
- Our graduates can collaborate with experts of their own fields and of other fields.
- Our graduates are digital literates and data literates. They understand digitality and data both in their fields and across disciplines and can handle them in a knowledgeable and critical way.
- Our graduates have the field-specific and cross-disciplinary competencies in sustainability at their disposal and are able to weigh the consequences of their action carefully.
- Our graduates demonstrate gender and diversity-awareness in their fields and across disciplines and can apply this awareness in practice.



# Principles for Academic Study and Teaching at Technical University of Darmstadt

- Our graduates have appropriate language and intercultural skills that allow them to communicate and act successfully in international contexts.
- Our graduates are open to innovation and knowledge transfer in their thinking and action.
- Our university teachers and lecturers are didactically competent professionals.
- Our university teachers and lecturers align the form and structure of their courses with the most current academic and didactic findings of their disciplines.
- Our university teachers and lectures are well trained in competently integrating the interdisciplinary topics internationality, diversity, sustainability, digital literacy, data literacy, innovation and knowledge transfer into their field-specific teaching contents.

## 2.2 Student-centred means that:

- At TU Darmstadt, our students are at the centre of academic study and teaching.
- Academic study and teaching are aligned with the competencies that we expect from our graduates. These competencies are formulated as “Learning Outcomes”.
- Students are encouraged to look after their personal health.

## 2.3 Personal development as human beings means that:

- Students are encouraged to become democratically well-informed, creative personalities capable of critical thinking, in addition to becoming responsible members of TU Darmstadt and our society.
- Students are encouraged to assume personal responsibility for their studies and are given the opportunities to do so flexibly based on their personal needs.

## 2.4 Establishing a culture of openness includes:

- Exchanging knowledge and information with other disciplines and practising interdisciplinary teaching;
- Perceiving diversity among all people involved in the teaching-learning process as a chance of finding innovative and creative solutions;
- Being open for technological and social transformation and taking on responsibility for shaping this transformation based on science;
- Exchanging knowledge and information with the players in the field (industry, research etc.);
- Examining and discussing innovative teaching, learning and examination formats and their didactically sensible use based on facts and evidence;
- Encouraging and promoting diverse international experience of study;
- Being open for constructive criticism and student participation with the aim of continuously improving the quality of academic study and teaching (quality culture and quality management).

## 2.5 Appreciative interpersonal interaction means that:

- Teaching staff, students and all personnel supporting teaching activities behind the scenes treat each other with respect and communicate with one another on equal terms.
- All students, university teachers and lecturers of TU Darmstadt feel accepted and appreciated. All of them enjoy equal opportunities to achieve their personal goals.
- Our teaching staff are well trained in competently dealing with aspects of gender and diversity in their courses.



## 2.6 Good studiability means that:

- General organisational and structural conditions are in place that facilitate academic studies.
- General organisational and structural conditions are in place that take account of students' circumstances and living conditions.
- Degree programmes give students scope for mapping out their course of study based on personal preferences.
- A motivating study climate exists that supports ambitious and demanding courses of study.
- Students can complete their studies in a reasonable period of time.
- Students can gain experience abroad seamlessly without disrupting their respective courses of study.
- Study and teaching are supported by a good scientific, technical, spatial and social infrastructure.
- Systematically meshed and target-group-specific offers of academic guidance, consultation and counselling assist students in their studies.
- Students can take advantage of specific preparatory and supportive offers.
- The transitions from school to university, from Bachelor's to Master's degree programmes, and from study to professional practice are usefully and sensibly organised and maintained.



## 3. Putting the Principles for Academic Study and Teaching in concrete form and practice

### 3.1 High academic quality in study and teaching

**Academic study at TU Darmstadt meets high academic quality standards both regarding the design and implementation of study and teaching for our students and regarding the competencies of our graduates.**

TU Darmstadt sees itself as a university where research and teaching are equally important and closely meshed. There is a clear and early focus on research in teaching that is evident in our research-oriented range of academic programmes.

The degree programmes of TU Darmstadt offer excellent state-of-the-science teaching in terms of subject matter and university didactics. The academic course of education (*Bildungsweg*) starts by imparting and working out fundamental facts, methods and theories of the respective discipline. Various stimulating teaching formats and course types help our students to acquire new knowledge and to apply the introduced methodologies successfully. This includes imparting and training the rules and field-specific dos and don'ts of good scientific practice. Students also learn to explore and reflect on new

fields of knowledge and tasks on their own. They actively collaborate in research projects as early in their Bachelor's degree programmes as possible. This way, they develop research-methodological skills and translate their theoretical knowledge into practical research

In line with the digital transformation of our knowledge-based society, TU Darmstadt is establishing a culture of digital literacy in study and teaching. During the course of their studies, our students acquire the necessary cognitive, communicative and technical skills to know how to critically deal with digitality both in their fields and across disciplines, to research, assess, present and share information. Their competence in dealing critically with research data (data literacy) is developed in accordance with their field of study.





## Principles for Academic Study and Teaching at Technical University of Darmstadt

Our graduates have the motivation, the knowledge and the ability to formulate new questions and to develop innovative concepts and methods to solve them. In their jobs, they will then contribute to solving pressing questions of science, economy and business, and society.

It matters greatly to TU Darmstadt that its graduates are able to put themselves and their action into a wider context and have the field-specific and cross-disciplinary competencies in sustainability at their disposal. Aspects of sustainability are integrated into the field-specific contents of all degree programmes of TU Darmstadt and can be broadened by attending additional courses. This enables our graduates to put theory and practice of their discipline into a higher economic, social, ecological and political context and to consider the ethical consequences of their action.

Graduates of TU Darmstadt are able to integrate aspects of diversity such as gender, physical constitution or culture into their field-specific and interdisciplinary thinking and acting. The topic is picked up in field-specific study and teaching contents that deal with people, where people use or make use of something or where people are the "object of research".

Our graduates are able to assess the correlation and interrelation between

their discipline and other disciplines. They are able to cooperate and collaborate with experts from their own and other disciplines. This is part of their training in interdisciplinary study projects at TU Darmstadt. In this teaching format, our students explicitly train to present their ideas and solutions orally and/or in writing competently and clearly. This competence training is consolidated during their course of study.

In addition, graduates of TU Darmstadt demonstrate the linguistic and intercultural competencies for successfully cooperating, collaborating and acting in international contexts. To this end, TU Darmstadt provides opportunities for our students to experience internationality in various ways, for instance by offering:

- A range of courses with contents relating to international matters;
- Virtual and real studies abroad;
- Master's degree programmes taught in English at TU Darmstadt;
- A range of joint virtual courses as well as joint and double-degree programmes with international partner universities; and
- The opportunity to study within the European university network Unite! on its virtual and real campus.

This is supported by wide-ranging language development opportunities as described in the functional-multilingualism language concept of TU Darmstadt.

With "research" and "teaching" being our first and second mission, the holistic transfer strategy of TU Darmstadt called xchange is our third mission. This is the multidirectional and reciprocal exchange of scientific knowledge, know-how and technologies with the non-academic world and is an integral part of our University. During their studies, our graduates have developed the ability to think and act critically keeping innovation and technology transfer in mind. This enables them to play their part in the development of responsibly acting institutions and enterprises towards ecologically, economically and socially sustainable transformations.

University teachers and lecturers of TU Darmstadt are key players who ensure the high academic quality in study and teaching. They are excellent researchers in their respective disciplines and align

the type and structure of their courses with current academic and field-specific didactic findings. To this end, they reflect on their teaching and its effectiveness based on facts and evidence.

Our university teachers and lecturers are didactically competent professionals who practice life-long learning. The Centre for Educational Development and Technology (HDA) of TU Darmstadt provides professors, research associates (WiMi), external part-time lecturers and student tutors with target-group-specific offers of further education and qualifying training, including platforms for exchange and networking. Our teaching staff continues their personal growth in relevant topics after having obtained baseline competencies in higher-education didactics. They are well trained in competently integrating the interdisciplinary topics internationality, diversity, sustainability, digital literacy, data literacy, innovation and knowledge transfer into their field-specific teaching contents.



## 3.2 Student-centred study and teaching

Our students are at the centre of academic study and teaching. The organisation, structuring and contents of all Bachelor's, Master's and Teacher Education degree programmes of TU Darmstadt are aligned with the competencies that our students will have developed by the time of their graduation. This is also true both for how the respective range of courses and academic programmes are organised and structured and for how examinations are integrated in our students' course of study.

Students are often faced with challenging/demanding circumstances and conditions that can lead to stress and health issues. TU Darmstadt assists all members of the University in matters of personal health care by providing suitable general conditions (e.g., for organising and structuring degree programmes) and demand-driven advisory and counselling services etc.

## 3.3 Personal development as human beings

TU Darmstadt wants to be attractive to qualified and motivated students, independent of their gender, age, social, ethnic or national origin, sexual orientation and gender identity, health impairment or disability, religion or belief. Our University expects their students to be highly committed. At the same time, it provides an inspiring environment conducive to learning that encourages students to assume personal responsibility for their studies and to map them out flexibly based on their personal needs. The circumstances and conditions that students with health impairments or disabilities, international students, first-

generation students, students with carer-responsibilities and working students face are taken into account.

Students are able to choose their own course of studies, for example, by opting for part-time studies or by taking advantage of the freedom of choice provided for in the regulations of their degree programmes to define their own focus areas in accordance with their personal interest. Mentoring talks support academic learning. This teaching format promotes discursive discussions that include field-specific contents and personal feedback on the students'

learning progress and their acquisition of competencies during their studies based on personal prerequisites and interests of the students.

Students are trusted to assume responsibility for their studies and educational choices. Various opportunities to actively contribute are open to students: They can become mentors during the orientation phase; teach as qualified tutors; take part in the departmental student bodies, governing bodies of the University and higher-education-policy-related groupings as well as in student-led University groups and initiatives that make campus life attractive.

Study and teaching at TU Darmstadt aim to encourage students to become democratically well-informed, creative personalities who are capable of critical thinking and have acquired extensive field-specific and interdisciplinary competencies during their studies. This includes the ability to assess and evaluate, to think carefully and deeply, to cooperate and to be innovative. The intended competencies are to enable graduates to take on scientific, professional and social challenges in a responsible manner and to work within professional contexts of an international nature. Our graduates are expected to be responsible members of TU Darmstadt and our democratic society as a whole.

## 3.4 Culture of openness

Learning and teaching at TU Darmstadt is characterised by a culture of openness. Various influences enrich and shape the Bachelor's, Master's and Teacher Education degree programmes at our University.

**Exchanging knowledge and information with other disciplines and practising interdisciplinary study and teaching** are essential to our vision. TU Darmstadt offers Bachelor's, Master's and Teacher Education degree programmes that contain aspects of study taken from

the engineering sciences, the natural sciences, the humanities and social sciences. Questions concerning technology play a significant role and are looked at from various points of view. Dedicated interdisciplinary degree programmes are a profile-developing element of our University's range of academic programmes. TU Darmstadt understands an excellent disciplinary expertise to be a requirement for an excellent interdisciplinary collaboration. Nevertheless, it is important to integrate



## Principles for Academic Study and Teaching at Technical University of Darmstadt

concepts and methods of other disciplines early on in undergraduate studies. Both on Bachelor and Master level, cross-departmental and interdisciplinary aspects of study from respectively complementary disciplines are integrated in all degree programmes. This also applies to continuing-academic-education degree programmes.

To establish an open and diverse culture of teaching and learning requires that we **perceive diversity among all people involved in the teaching-learning process as an opportunity of finding innovative and creative solutions**. The members of TU Darmstadt are varied and diverse just as in the surrounding society. Members of TU Darmstadt as a whole are students, teaching staff and support staff who are people with differing gender identities, nationalities and ethnic origins, with differing heritage languages, religions and beliefs, with differing physical abilities and impairments, with differing life experiences and levels of social integration, with differing social backgrounds and sexual orientation. The resulting diversity of experiences and perspectives are made visible in the range of courses and academic programmes of TU Darmstadt. They are incorporated critically in field-specific contents and are used to develop innovative and

creative solutions. In doing so, we actively promote equal opportunities and non-discrimination.

All degree programmes of TU Darmstadt address central questions from technology, nature, society and economy. **We are open for technological and social transformation and take on responsibility for shaping this transformation based on science**. Based on the latest state of the science, transformation processes are continuously incorporated and actively shaped by establishing new degree programmes, refining existing degree programmes, and extending and rearranging the current range of courses based on and actively.

The acquisition of competencies in terms of content and methodology in the degree programmes of TU Darmstadt is oriented towards the graduates' later professional practice as responsible members of society. We maintain diverse partnerships outside academia **and stay closely in touch with stakeholders from the world of professional practice**. This also includes offering degree programmes of continuing academic education and an openness for suitable students who come to us via a vocational course of education.

Courses are offered that focus on the requirements of a qualified labour market,

such as project seminars, labs or work placements (internships). In addition, students are encouraged to reflect their field-based identity early on in their orientation phase to get ready for their later career start. They also visit professional events that provide orientation for possible occupational and professional fields at an early stage.

With regard to the conceptualisation of learning and teaching, TU Darmstadt stands up for openness and diversity. Our teaching staff **discuss their teaching, learning and examination formats based on facts and decide on this basis how useful these formats are from a didactic point of view**. All of our degree programmes are organised and structured with competencies in mind and encourage to study independently and flexibly. During the courses, communication and cooperation are encouraged between students and between students and teaching staff. Open and demanding teaching and learning situations are integrated into the curricula. The forms of examination are designed in such a way that it is also possible to test students core competencies across disciplines.

Using analogue, digital and hybrid teaching, learning and examination formats (including course recordings)

reduces barriers and makes academic study more flexible (in terms of time, place and individual learning speed).

TU Darmstadt's open and diverse culture of teaching also includes looking across national borders. Our students are encouraged to gain **diverse international study experience**. We strive to offer physical and virtual mobility to all students. This includes both study-related stays abroad and virtual or hybrid studies abroad; joint virtual courses with international partner universities along with field-specific contents integrating international, intercultural and linguistic aspects of study and teaching right here in Darmstadt.

The development of tangible and virtual formats within the European university network Unite! provides an excellent opportunity for internationalising study and teaching at TU Darmstadt. Degree programmes taught in English play a significant role also. They are offered by most departments on Master's degree programme level.

The quality of academic study and teaching is measured above all by the extent to which the intended competencies required for responsible academic, professional and social practice are acquired by the





# Principles for Academic Study and Teaching at Technical University of Darmstadt

students and by the extent to which the degree programmes can be completed within the prescribed period of study. Both students and teaching staff are involved in the further development of study and teaching. The quality culture and the quality management of TU Darmstadt are by nature **open for constructive criticism and student participation with the aim of continuously improving the quality of academic study and teaching.** Students actively influence the nature of their studies at our University by way of student surveys, across-the-board course

evaluations and participating in governing bodies.

With the system accreditation in 2017, TU Darmstadt has confirmed that its integrated quality management (inQM) based on transparency and participation meets the external and internal quality requirements for developing new and refining existing degree programmes. The University's integrated quality management is being revised at regular intervals and subjected to external review.

## 3.5 Appreciative interpersonal interaction

Study and teaching at TU Darmstadt are enhanced by appreciative interpersonal interaction.

Appreciative interpersonal interaction means with regard to diversity that we support the diversity of our students and teaching staff and that all of them receive a fair chance to achieve their personal goals. In terms of respect, participation and inclusion, the members of TU Darmstadt actively stand up for equal opportunities and non-discrimination.

This means that teaching staff, students and everyone else involved in teaching operations at TU Darmstadt treat and communicate with each other respectfully and on equal terms. The stakeholders take the time needed to discuss matters and are open to constructive criticism. With this appreciative attitude, they contribute to a friendly teaching and learning environment without fear, where making errors is part of the learning process. This encourages creative and innovative solutions in study and teaching.

Our teaching staff are well trained to competently take into account aspects of diversity, such as gender, nationality, language, ethnic origin, religion or belief, physical abilities, age, social origin and sexual orientation, when organising and structuring their teaching. In case of

conflicts in this matter, there are points of contact available, such as the offices

responsible for complaint management and anti-discrimination.

## 3.6 Good studiability

Good studiability is a major characteristic of the Bachelor's, Master's, Teacher Education and continuing-academic-education degree programmes of TU Darmstadt.

living conditions to facilitate successful academic studies as much as possible. University-wide, virtual (asynchronous) and hybrid teaching and examination formats have been made available to support this ambition. In addition, the study and examination plans (SPP) are arranged in such a way that it is possible to adjust the duration of studies to allow for raising children, caring for dependent family members or working part-time. Academic studies for people with serious (chronic) health conditions or physical impairment(s) are also supported by providing suitable adjustment measures to alleviate otherwise unfair study/examination conditions (*Nachteilsausgleich*), by providing an inclusive infrastructure (conversion or new build), and by providing suitable technical aids.

Good studiability means that general organisational and structural conditions are in place that facilitate academic studies. The individual course modules and examinations are interlinked and comprise an appropriate workload. The study and examination plans (SPP) are set up in such a way that the students' workload in terms of learning and working on projects etc. are appropriately distributed across the academic year. The examinations are organised in such a way that examination retakes do not extend the student's period of study, if possible. In additions, students have the opportunity to take voluntary additional examinations or do extra work.

The degree programmes of TU Darmstadt give students scope for mapping out their course of study based on personal preferences. This includes the option to define their own focus areas in

General organisational and structural conditions are put in place that take account of students' circumstances and



## Principles for Academic Study and Teaching at Technical University of Darmstadt

accordance with academic regulations or to integrate stays abroad into their course of study. In addition, students can reduce their study and examination load per semester by either switching to part-time studies temporarily or permanently.

The positive general conditions and the ongoing appreciative academic exchange between teaching staff and students of TU Darmstadt create a motivating climate for studying and allow for demanding academic studies.

All departments and fields of study of TU Darmstadt aim to see our Bachelor's and Master's students finish their studies successfully with a degree that meets our high quality standards. Good studiability means in this context that students can complete their studies in a reasonable period of time.

Good studiability also means that students are able to seamlessly integrate gaining experience abroad into their respective courses of study. The departments and fields of study of TU Darmstadt encourage their students to look abroad and promote this interest by offering stays abroad of at least one semester. Special agreements are negotiated with partner universities to allow for graduation within the prescribed period of study. The performance-based credits earned at partner universities during these study periods will be

recognised and credited at TU Darmstadt. This also applies to study examinations that have been taken via a virtual range of courses at partner universities.

TU Darmstadt supports study and teaching by providing a good scientific, technical, spatial and social infrastructure that facilitates acquiring the targeted competencies, mapping out flexible courses of study and strongly personalised learning paths. This includes the provision of suitable rooms for courses, for self-study and for working in student project and assignment groups. It also includes well-funded, stocked and equipped libraries, media and learning centres at TU Darmstadt. Study and teaching are also supported by providing a suitable social infrastructure. This includes the availability of rooms for social exchange or for student initiatives. It also includes university-run childcare services for students with children. Suitable technical and environmental infrastructure is available for the scheduled range of virtual and hybrid courses and to support our students on their way to digital literacy. This includes fitting lecture halls with suitable recording technology, making suitable software available across the board, increasing and protecting sufficient Internet and intranet capacities or providing rooms on campus to allow for flexible switching between virtual and analogue courses.

Studying at TU Darmstadt is facilitated by systematically meshed and target-group-specific offers of academic guidance, consultation and counselling (such as for women, first-year students, international students, students with health conditions, part-time students, students with children). These offers are clearly structured and easily accessible. The teaching staff, the departments, fields of study and TU Darmstadt as a whole offer academic guidance and consultation services to facilitate learning. In addition, there are topic or competency-specific offers, such as guidance on academic writing.

Furthermore, TU Darmstadt has a well-established offer of preparatory and accompanying programmes that our heterogeneous student body can take, as necessary. This includes preparatory courses in mathematics and other subjects, preparatory programmes for international students on Bachelor's and Master's level, and professorial mentoring programmes during the orientation phase (in the departments and target-group-specific). TU Darmstadt offers our students language courses and formats for acquiring intercultural competencies in preparation for their international study experience.

Good studiability also includes sensibly organised and supported transitions

from school to university, from Bachelor's to Master's degree programmes, and from study to professional practice. Prospective Students for Bachelor's degree programmes are recruited in close cooperation with schools and a variety of information events encouraging them to study at TU Darmstadt. TU Darmstadt offers online self-assessment (OSAs) and participatory formats to school students before they begin their studies. This way, school students learn about the competencies and orientations needed for specific degree programmes. Departments and fields of study of TU Darmstadt offer welcome and consultation talks (or selection procedures for degree programmes with restricted admission) across the board for prospective students.

During the orientation phase, various events for orientation are scheduled where first-year students can get in touch with other students studying in the same field. There are also more intense forms of supervised small-group assignments, highly motivating events (such as study projects and events that promote core competencies for studying), and a well-functioning mentoring system (with students and/or professorial mentors) available.

TU Darmstadt aims for a high number of students to continue their studies past



## Principles for Academic Study and Teaching at Technical University of Darmstadt

their Bachelor's degree. Undergraduates are encouraged to enrol in a Master's degree programme. The departments provide them with suitable guidance and consultation services. The transition from a Bachelor's to a Master's degree programme can be mapped out flexibly.

To facilitate the transition from study to occupational practice, there are suitable guidance and consultation services available too.





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