

Guide to the internal quality assurance system at ETH Zurich

Adopted by the ETH Zurich Executive Board on 26 October 2021

Basis: Ordinance of the Higher Education Council on Accreditation within the Higher Education Sector of 28 May 2015, Annex 1, Quality standards, Standard 1.1:

The higher education institution ... shall define its quality assurance strategy. This strategy shall contain the **essential elements of an internal quality assurance system** aimed at ensuring the quality of the activities of the higher education institution ... and their long-term quality development as well as promoting the development of a quality culture.

According to the ETH Law, the six main aims of ETH Zurich, EPF Lausanne and the research institutions of the ETH domain are teaching, research, support of junior scientific staff, provision of scientific and technical services, public relations and transfer of research findings. These institutions should discharge their remit at an internationally recognised level.¹ The two ETHs conduct teaching and research in engineering, the sciences, architecture, mathematics and other related disciplines; these activities are complemented by input from the humanities and social and political sciences.²

ETH Zurich publishes its strategic priorities for the respective four-year planning period in a "Strategy and Development Plan", which is abbreviated in the following as "SDP". This strategy document is the product of a broad-based, bottom-up process involving contributions from the Strategy Commission, the many university bodies and the departments.³ The first issue of the Guide, issued by the Executive Board on 15 June 2020, concerned the SDP 2017–2020. This updated version relates to the SDP 2021–2024.

The framework for strategic planning at ETH Zurich is provided by the strategic planning of the ETH Board for the ETH domain and the Despatch of the Federal Council on the Promotion of Education, Research and Innovation for the respective planning period (2021–2024).

The SDP 2021–2024 names qualitative goals and the measures for achieving them, and therefore also embodies the quality strategy of ETH Zurich. Implicitly it is thus a guide to quality assurance at the institution. The following document pinpoints the associated quality assurance policies, structures them and extends them by identifying the processes and bodies most important for quality assurance. Here the focus is on the "how": how does ETH ensure that it fulfils its tasks? How does it safeguard the quality of its activities and the long-term development of quality at the institution?

¹ Art. 2, Para. 1 and 3 of the ETH Law

² Art. 7, Para. 1 of the ETH Law

³ SDP 2021-2024, p. 57

⁴ SDP 2021–2024, p. 5

1. Policies

Flexible organisational structure and a management culture which features subsidiarity

ETH Zurich deploys a flexible and flat department organisation structure which strengthens the unity of teaching and research, enables rapid adaptation to the changing requirements of a dynamic science and fosters cooperation across internal organisational boundaries. Subsidiarity and personal responsibility, which are core values of ETH Zurich management culture, facilitate an efficient approach to the plurality which is so essential to the long-term success of a university.⁵

Culture of quality

ETH members strive for the highest quality in all that they do, in both core academic activities and administrative and support functions. ETH Zurich understands a culture of quality to be predominantly a culture of learning which is oriented towards the ever-changing requirements and expectations of society, students, professors and employees. It sees its culture of quality as part of ETH culture. The latter is founded on a common perception of and commitment to quality in all activities. This involves not only psychological aspects such as values and personal responsibility, but also structural features which include processes, organisation, standards, participation and responsibility. The culture of quality is part and parcel of the daily work and perceived common identity of ETH employees.

Quality assurance system

The quality assurance system at ETH Zurich is process-oriented. Processes address the needs of internal and external stakeholders and extend across the university's internal organisational boundaries. The principle of subsidiarity applies. This means that responsibility for processes relevant to quality and the associated documentation lies with both departments and central organs (administrative departments and staff units), where the expertise is. Examples are the appointment of professors, and student admissions.

The quality assurance system at ETH Zurich comprises the organisational structures and processes which address performance expectations and requirements in the areas of research, teaching, and knowledge and technology transfer. Via ongoing, future-oriented learning and improvement they identify and tackle any causes of non-performance.

The quality assurance system at ETH Zurich underpins the institution's efforts to

- strive for **excellence** in all of its activities;
- develop its **culture of quality** across all university groups;
- fulfil its **statutory duties** in general and assure their quality and development in particular;
- achieve the strategic goals set by the Federal Council, the ETH Board and ETH Zurich itself;
- regularly appraise the utility of its quality management system, and develop it further.

The Executive Board is responsible for overall quality assurance.⁷

2. Success factors⁸

The quality and success of ETH Zurich are founded on

- Diversity and equality of opportunity: ETH Zurich comprises a working and academic environment where all members and students are held in the same regard and fostered equally.

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⁵ SDP 2021–2024, p. 52

⁶ SDP 2021–2024, p. 4

⁷ Art. 4, Para.1 (g) of the ETH Zurich Organisational Ordinance

⁸ SDP 2021-2024, pp. 47-55

- Talent and early-career researchers: ETH Zürich recruits the best talent from around the globe, independent of gender, culture or social origin, and creates an excellent framework for their development.
- Leadership and good governance: ETH Zurich management staff elicit and promote the motivation of their employees by trusting them and giving them room to manoeuvre.
- International networks, partnerships and alumni: ETH Zurich's global engagement permeates all of its activities, from education to research through collaboration with its alumni and partners across the world.
- Infrastructure and resources: With the help of innovative, modern technology ETH Zurich creates an efficient, flexible and safe working environment for all ETH members according to need and the state-of-the-art.

Maintaining these success factors is a central concern for ETH Zurich. In its Strategy and Development Plan (SDP) the institution sets out its strategic priorities for the respective planning period (currently 2021–2024) and identifies measures for realising them.

3. Qualitative goals in the core tasks of ETH Zurich (2021–2024)

• Teaching⁹

- 1 ETH Zurich fosters cross-disciplinary skills such as management thinking, social competence, leadership capability, computational expertise and the ability to analyse complex topics.
- 2 To lay the foundation for lifelong learning, ETH Zurich is creating more room in degree programmes where curiosity and creativity may take flight, and is increasing flexibility in all its degree programmes.
- 3 In teaching, ETH Zurich deploys modern technologies, incorporates the latest scientific knowledge in the classroom and conducts research in the area of education.
- 4 The imparting of critical thinking is an important element in programmes for future teachers, who can then convey the concept to their pupils at the school level.

• Research¹⁰

- 1 ETH Zurich has the freedom to conduct open-ended research, and creates optimal conditions for utilising the innovative potential of fundamental research.
- 2 Using their strengths and expertise the departments work closely to establish focused interdisciplinary competences and interdisciplinary research centres.
- 3 ETH Zurich has at its disposal, consolidates and builds first-class infrastructure, and makes its technology platforms available to both the research community and industry.
- 4 ETH Zurich creates structures which ensure attention and adherence to ethical principles and good scientific practice in teaching and in common daily interactions.

Knowledge and technology transfer / continuing education¹¹

- 1 ETH Zurich promotes partnership-based exchange and cooperation with Swiss companies, contributing to the innovation strength and prosperity of the country.
- 2 ETH Zurich enables society to benefit from its research findings by working closely with industry and public authorities, and fosters the swift translation of new ideas into concrete applications through spin-offs. Here ETH Zurich undertakes to maintain the positive momentum of the last few years.

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⁹ SDP 2021–2024, pp. 36–38

¹⁰ SDP 2021–2024, p. 40

¹¹ SDP 2021–2024, p. 44

3 ETH Zurich develops new models for lifelong learning and continuing education and is open to new target groups, thereby strengthening the employability of the Swiss workforce and the competitiveness of Switzerland.

Diversity and equal opportunity¹²

1 ETH Zurich is imbued with a culture of esteem, respect and inclusion which enables all ETH members to interact productively on an equal footing.

- 2 ETH Zurich ensures equal opportunity, and is working to increase the proportion of women in teaching and research at all levels and particularly in leadership positions and ETH management bodies.
- 3 ETH Zurich is increasing the proportion of female professors by striving for a quotient of 40% in new appointments.
- 4 ETH Zurich defines inclusion as the shared task of all ETH organisational units, guided by the principles of freedom from barriers, needs orientation and cooperation.

Talent and early-career researchers¹³

- 1 ETH Zurich trains early-career researchers and prepares them for academic or professional careers in a competitive global environment.
- 2 ETH Zurich is systematically expanding the recruitment, training and supervision of early-career researchers. Here a career system which offers them optimal development possibilities is also being expanded.
- 3 ETH Zurich promotes porosity between science and the economy, and readies young scientists for jobs both inside and outside academia.
- 4 ETH Zurich offers its administrative and technical staff a large number of development options, helping them to sustain their performance and develop their skills throughout their careers.
- 5 ETH Zurich generates an inspiring environment which promotes collegial exchange, creates space for individual research and ensures access to first-class infrastructure.

Leadership and good governance¹⁴

- 1 ETH Zurich develops the leadership skills of its managers and strengthens the management competence of its academic departments. Leadership skills are systematically taken into account in the appointment of new professors and in the tenure process.
- 2 ETH Zurich has created a system in all units to identify suitable persons for leadership tasks and to support them through new training and mentoring programmes.
- 3 In the area of corporate governance, ETH Zurich is adapting its structures and planning and decision-making processes in order to establish leadership as a core element of the university and its culture.

International networks, partnerships and alumni¹⁵

- 1 ETH Zurich is strengthening its international networks and its visibility through research collaboration, and is a member of selected alliances and partnerships which benefit the entire university.
- 2 ETH Zurich fosters top-notch research achievements by collaborating with researchers who have complementary skills. This happens mainly in interactions among researchers themselves, who continually develop research collaborations with partners across the world.

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¹² SDP 2021-2024, p. 49

¹³ SDP 2021–2024, p. 50

¹⁴ SDP 2021–2024, p. 52

¹⁵ SDP 2021–2024, p. 53

- 3 ETH Zurich enters into partnerships with both leading universities and up-and-coming institutions to enable student exchanges which benefit all sides. It ensures that its students can gain experiences in a variety of cultural environments while also receiving excellent training in their fields of study.
- 4 With the help of its already strong presence in Singapore ETH Zurich is strengthening its engagement in Asia, particularly in China.
- 5 ETH Zurich is expanding its international alumni network and strengthening the role of its international alumni as institution supporters and communicators on the global stage.

Infrastructure and resources¹⁶

- 1 ETH Zurich offers modern, needs-based, cost-effective and coordinated support for teaching, research, knowledge transfer and national initiatives.
- 2 ETH Zurich maintains, and is expanding, its outstanding, flexible infrastructure, and manages growth by deploying state-of-the-art technologies.
- 3 ETH Zurich abides by the principles of sustainable development by using its financial resources responsibly and by being environmentally aware and resource-conscious in the construction, use and operation of its buildings.
- 4 ETH Zurich is advancing the digital transformation of the university, with active support for all members throughout the process.
- 5 ETH Zurich is imbued with a culture of responsibility in the area of health and safety.

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¹⁶ SDP 2021–2024, p. 54

4. Instruments and organisation of quality assurance and quality development

The following sections set out the main instruments, processes and organisational features which ETH Zurich deploys to ensure that it does the right things, and does them right.

Strategy process at the institutional level

At the level of the entire institution, the four-year planning process is decisive. The result of this process is documented in the Strategy and Development Plan for the respective four-year period. The process integrates the department-level planning process, the result of which is documented in the departments' planning papers for the corresponding period.

The Strategy Commission guides the Executive Board on strategic issues, and in particular helps the President to draw up the ETH Zurich Strategy and Development Plan.

Teaching

One of ETH Zurich's core tasks is research-based teaching. Its degree programmes impart methodological skills and disciplinary knowledge as well as interdisciplinary, system-oriented mindsets and cross-disciplinary competences. ETH Zurich cultivates a culture of personal responsibility for learning which fosters the individual strengths of its students and enables the flexible designing of studies. The range of study programmes and curricula are competitive and oriented towards the needs of the next generation and the world of work. The challenge is to develop new teaching content which imparts the foundations of each discipline while also addressing new, future-oriented topics. Graduates of ETH Zurich are in demand in social, scientific and economic institutions in Switzerland and around the world.¹⁷

Basis

The document "Teaching Policy at ETH Zurich" is the basis for development and evaluation of ETH teaching. From this teaching policy ETH has articulated quality criteria for curricula and courses and its expectations of all persons involved in teaching. These are set out in the document "Quality in Teaching at ETH Zurich".

Instruments and processes of quality assurance

- Appointments procedure (professors)
- Tenure procedure (Assistant professors)
- Approvals procedure for study programme regulations (revisions and new programme regulations)
- Admission of students to Bachelor's degree programmes, Master's degree programmes, doctoral studies and continuing education programmes
- Evaluation of teaching by students: a three-level procedure involving semester feedback, evaluation of course units and evaluation of written examinations
- Periodic evaluation of departments (peer reviews). Scope: research, teaching (degree programmes) and services
- Survey of university graduates conducted by the Federal Statistical Office
- Accreditation of degree programmes, governed by federal laws on university training for the medical professions
- Processes of judicature: legal remedies (internal: e.g. requests for reconsideration) and legal complaints (external: e.g. appeals lodged with a higher authority)
- Evaluation process in the framework of teaching awards

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¹⁷ SDP 2021-2024, p. 36

¹⁸ "Teaching Policy at ETH Zurich" of 4 Oct. 2016

¹⁹ "Quality in Teaching at ETH Zurich" of 4 Oct. 2016

Instruments and processes of quality development

- Support for departments in developing curricula from the Vice Rector for Curriculum Development and the Educational Development and Technology (LET) administrative department
- Rector's "Innovedum" fund for promoting innovative teaching projects and degree programme initiatives
- Range of courses in university teaching offered by LET (under the auspices of the ETH Rector)
- Range of "didactica" courses in university teaching offered jointly by the University of Zurich and ETH Zurich
- Guidance to faculty on the use of new teaching technologies by Educational Developers in the departments and by LET
- LET guidance to faculty on designing performance assessments
- Excellence Scholarship and Opportunity Programme (ESOP)

Organisation

- The <u>departments</u> are responsible for the degree programmes.²⁰ Every degree programme is run by a full or associate professor as its Director of Studies. Directors of Study are usually represented in department management bodies.
- The departmental <u>Teaching Commissions</u> address the quality assurance and quality development of teaching at department level. They are responsible for one or more degree programmes of the respective department. They are composed of faculty, students and representatives of scientific staff on the basis of parity. Normally a Director of Studies chairs the meetings of the departmental Teaching Commission.²¹
- Institutionalised dialogue with students and scientific staff: The Rector meets with the heads of both
 the Association of Students at ETH Zurich (VSETH) and the Academic Association of Scientific Staff
 (AVETH) several times per semester. The Rector also meets with representatives of the student
 associations once per semester.
- The <u>Study Conference</u>, headed by the Rector, addresses central academic and examination issues at institutional level and ensures the uniform application of regulations and directives in the area of teaching. The members of the Study Conference are the departmental Directors of Study. The Vice Rectors, the Heads of Academic Services, Student Services and LET and the Rector's staff are also present at its meetings. The Study Conference meets twice per semester. Members may contribute their own agenda items.²²
- The <u>General Conference of the Teaching Cadre</u> addresses issues related to the development of ETH Zurich and can report deficiencies and suggest improvements to the responsible bodies. The General Conference comprises all members of the teaching faculty in the respective academic year. The Rector heads it.²³
- The <u>Executive Board Teaching Commission</u>, headed by the Vice Rector for Curriculum Development, advises the Executive Board on innovation in teaching and learning. It suggests to the Rector focal point topics on teaching and learning development which were solicited at ETH Zurich via calls for proposals. Its further tasks are to initiate, judge and prioritise teaching and learning innovation projects and to develop teaching via teaching and learning technologies adapted to the university level. The Executive Board Teaching Commission consists of seven professors from

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²⁰ Art. 29 of the ETH Zurich Organisational Ordinance

²¹ Art. 45, Para. 1 (c) and Art. 50-52 of the ETH Zurich Organisational Ordinance

²² Art. 59 of the ETH Zurich Organisational Ordinance

²³ Art. 60 of the ETH Zurich Organisational Ordinance

different scientific areas at ETH Zurich; two student representatives; and one scientific staff representative.²⁴

- Educational Developers are contact persons in the departments for issues in the area of teaching. They play an important role in stimulating, coordinating and disseminating innovation. Because they are embedded in the departments they represent the subject-specific view and have a subject-specific understanding of didactics. Educational Developers are members of the relevant teaching bodies in their departments, cultivate discussion among themselves and with LET, and meet regularly with the Vice Rector for Curriculum Development.
- The administrative department <u>Educational Development and Technology (LET)</u>, which reports to the Rector, fosters teaching quality through its range of continuing education courses in university teaching; innovation management; organisation of teaching evaluations; curriculum development and examination support activities; and the maintenance and development of teaching and learning platforms. LET is predominantly a service unit for faculty, but it also helps student associations to conduct semester feedback.²⁵
- The administrative department <u>Academic Services</u>, which reports to the Rector, carries out the administrative processes fundamental to teaching and manages university-wide teaching operation processes. It assists students, doctoral students and members of the teaching cadre in all areas of studies not connected with the content of studies, and administers academic continuing education.
- The administrative department <u>Student Services</u>, which reports to the Rector, offers a range of advisory and support options and activities for students and persons interested in studying: events and guidance in selecting study programmes; coaching and guidance on diverse academically relevant themes (e.g. studying, preparing for examinations, time management, motivation, academic planning etc.); information for students with disabilities; advice on financing of studies; Housing Office; and "onboarding" of international students.
- The <u>Psychological Counseling Service</u> of the University of Zurich and ETH Zurich provides guidance to students and doctoral students in crisis situations. It has access to a steering group, a committee which comprises professors and representative of groups from both sponsoring universities. The relationship with the Psychological Counseling Service goes through Student Services.
- Ombudspersons are a general point of contact (also for students) in cases of conflict which cannot be resolved through direct discussion, and in cases where there is suspicion of illegal conduct. Ombudspersons are both former ETH members and persons with no relationship to ETH.
- <u>Trusted intermediaries (confidants)</u> advise, support and mediate in conflicts related to scientific practice. Students may also draw on their services.

The Rector is responsible for quality assurance in teaching.²⁶ The Rector is supported in this role by the Vice Rector for Study Programmes or, at the degree programme level, by the respective Director of Studies.²⁷

Research

ETH Zurich defines itself primarily through the quality of its scientists, and through its research fields.²⁸ It is a university's members which determine its success. And it is research which builds a foundation for the success of ETH as a whole, and in particular for targeted ETH contributions which address global challenges.

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²⁴ Art. 28, Para. 1 (b) of the ETH Zurich Organisational Ordinance

²⁵ Art. 21a of the ETH Zurich Organisational Ordinance

²⁶ Art. 9, Para. 4 (a) of the ETH Zurich Organisational Ordinance

²⁷ Art. 57, Para. 2 (b) of the ETH Zurich Organisational Ordinance

²⁸ SDP 2021–2024, pp. 14, 20, 40

The strategic challenge lies in advancing selected new research areas while maintaining and developing expertise in existing core areas.

Instruments and processes of quality assurance

- Appointments procedure (professors)
- Tenure procedure (Assistant professors)
- Recruitment of doctoral students and other scientific staff
- Evaluation process in the framework of internal research promotion programmes and scientific awards
- Evaluation process for proposals to the ETH Zurich Ethics Commission (permission for research involving humans)
- Evaluation process in the framework of the "Scientific Equipment Programme" (competitive internal funding programme for research infrastructure)
- Evaluation processes of scientific platforms (selection of research programmes which can access programme infrastructure)
- Evaluation of departments through international committees of experts (peer reviews)
- Evaluation of competence centres

Instruments and processes of quality development

- Professorship planning
- Evaluation of departments through international committees of experts (peer reviews)
- Dialogue between the Executive Board and the departments: The annual dialogue between the Executive Board and the departments primarily addresses professorship planning and, to monitor tasks versus implementation status, how far the results of department evaluations and previous dialogues have been realised.
- ETH-internal programmes which promote research, and scientific awards
- Appointments process (where the potential of a candidate is more important than the published professorship profile)
- Technology platform business plans
- Accreditation of competence centres

Funding tools and processes

- Standard equipping of professorships, involving start-up funds to finance research infrastructure and the means to hire scientific staff (doctoral students, Assistants, Senior Scientists)
- Competitive funding programmes
 - ETH Grants: Funding of disciplinary and collaborative interdisciplinary research projects with frequently uncertain outcomes
 - <u>Career Seed Grants for Postdoctoral Researchers</u>: To extend ETH Grants, supports selected projects of young researchers to enable them to establish independent research portfolios at an early phase in their careers.
 - ETH Fellowships: Funding of postdoctoral scholars (for a stay at ETH Zurich)
 - Doc.Mobility: Funding of doctoral students for stays abroad of up to six months
 - Society in Science The Branco Weiss Fellowship: Funding of postdoctoral scholars (for a stay at a university of their choice)
 - <u>Pioneer Fellowships</u>: Funding of young researchers to develop innovative products or services following, and based upon, their scientific thesis work (Master's thesis or doctoral thesis)
- Scientific Equipment Programme (competitive): Makes research infrastructure available
- Support for researchers in competing for international funding by <u>EU Grants Access</u>, a unit run jointly by ETH Zurich and the University of Zurich

The individual funding tools apply standard peer review procedures where research applications in specific disciplines are assessed by independent people working in the same field according to transparent, homogenous evaluation criteria set out in the guidelines of the respective tool. These quality standards ensure that applications are handled equally and that project acceptance is fair and based

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strictly on quality, thus seeing that the best applicants are selected irrespective of discipline, age, scientific reputation, position or gender.

Organisation

- The <u>departments</u> are responsible for fundamental research in their respective disciplines.²⁹ Research fields are reflected in the 16 departments, which range from Architecture and Civil Engineering to the Engineering Sciences, Natural Sciences, Mathematics, System-oriented Natural Sciences and Management and Social Sciences.
- Competence Centres: Interdisciplinary research is promoted at competence centres, among other
 places. It is subject to Executive Board approval and is time-limited. Extensions depend on the results
 of an evaluation. In competence centre networks researchers from different fields coordinate their
 scientific work and strategic goals, sometimes involving external partners.
- <u>Technology platforms</u>: ETH Zurich bundles cost-intensive scientific infrastructure together in technology platforms. These guarantee professional, efficient operation of equipment by competent technical and scientific staff. In the competence centres, which foster cross- and interdisciplinary cooperation, technology is developed further according to the needs of researchers.
- The <u>Research Commission</u> advises the Vice President for Research and further members of the ETH Zurich Executive Board on research-related issues. Its main task is to assess all of the grant and research project requests submitted to the Commission or to the Vice President, according to transparent criteria.³⁰
- The <u>Equipment Commission</u> evaluates requests submitted to the Scientific Equipment Programme with the help of referees. It strives for top equipment quality and cost-effectiveness.
- The <u>Ethics Commission</u> reports to the Vice President for Research and is an advisory Executive Board body. Its main task is to assess the ethics of research work at ETH Zurich involving humans.
- The <u>Awards Commission</u> reports to the Vice President for Research. Its main aim is to identify ETH researchers for nomination for important, generally cross-disciplinary research prizes and distinctions and to support their nominations. Scientific awards are an important indicator of research quality, also in the public eye.
- The <u>Animal Welfare Officer</u> advises and assists the Executive Board and ETH members on laboratory animal protection issues. The Officer reports directly to the Vice President for Research.³¹
- The <u>Commission for Good Scientific Practice</u> reports to the Vice President for Research and advises the Executive Board. Each of the 16 ETH Zurich departments designates a professor as a delegate for good scientific practice.
- Trusted intermediaries (confidants) are contact persons for questions of integrity in research and/or where there is suspicion of dishonest scientific conduct.

The Vice President for Research is responsible for quality assurance in research.³²

Knowledge and technology transfer / continuing education

Knowledge transfer and the economical implementation of research findings are an important bridge between universities and society. It is ETH Zurich's responsibility to make original knowledge and new research findings available to society in an efficient manner through training and transfer.³³

Basis

Guidelines on contracts, usage and spinoffs underpin knowledge and technology transfer at ETH Zurich. These guidelines define standards for cooperating with industry, the handling of intellectual property and the founding of spinoffs. The aim is successful knowledge and technology transfer which benefits the economy and society.

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²⁹ Art. 29 and 35 of the ETH Zurich Organisational Ordinance

³⁰ Art. 28, Para. 1 (c) of the ETH Zurich Organisational Ordinance

³¹ Art. 15b of the ETH Zurich Organisational Ordinance

³² Art. 10, Para. 4 (b) of the ETH Zurich Organisational Ordinance

³³ SDP 2021-2024, p. 44

Continuing education at ETH Zurich is measured according to the highest international standards. It is oriented towards the quality criteria of Swissuni, the association for university continuing education in Switzerland (not to be confused with swissuniversities), and its own strategic principles.

Instruments and processes of quality assurance / funding instruments

- Knowledge and technology transfer
 - The quality assurance of knowledge and technology transfer is based upon a number of established processes, checks and reporting procedures.
 - The <u>Pioneer Fellowship Programme</u> enables young researchers to turn their inventions into marketable, innovative products. It is oriented towards ETH alumni, Master's degree students and doctoral students.
 - The <u>Innovation and Entrepreneurship Lab (ieLab)</u> offers Pioneer Fellows work and laboratory space, and continuing education in entrepreneurship, coaching and networking. ETH spinoffs may also use its infrastructure if there is capacity.
- Continuing education
 - o Approvals process for proposed continuing education courses
 - Evaluation of teaching by students
 - Inclusion of major stakeholders (participants, alumni, employers, professional associations etc.) in the planning and evaluation of continuing education programmes
 - Department evaluation (peer review)

Organisation

- ETH Transfer (a unit of the Office of Knowledge Transfer and Corporate Relations)
 - o assists ETH members with questions surrounding research contracts with industry;
 - advises ETH Zurich researchers on intellectual property protection issues (patent registration and licensing);
 - bears responsibility for commercialising ETH Zurich inventions;
 - helps potential company founders through the early development phase (ETH Zurich spinoffs);
 - o runs the Pioneer Fellowship Programme and the ieLabs.
- Industry Relations (another unit of the Office of Knowledge Transfer and Corporate Relations)
 - o is the contact point for all questions coming from industry;
 - o connects potential cooperation partners with ETH Zurich researchers:
 - conducts viewings and visits of industrial partners in ETH laboratories and runs the Industry Day.
- <u>National Innovation Initiatives</u> (another unit of the Office of Knowledge Transfer and Corporate Relations)
 - manages on behalf of the European Space Agency (ESA), and runs for ETH Zurich, the Swiss branch of the ESA Business Incubation Center, a space start-up programme for the whole of Switzerland;
 - oversees ETH Zurich's participation in Switzerland Innovation (an ecosystem for networking of universities and innovative companies) and Switzerland Innovation Park Zurich (one of the six locations of Switzerland Innovation);
 - o represents ETH Zurich in various bodies and initiatives in the area of space research.

The Vice President for Knowledge Transfer and Corporate Relations is responsible for quality assurance in the area of knowledge transfer.³⁴

- Continuing education programmes (MAS/MBA, DAS, CAS) are run under the cognisance of the departments.
- The <u>School for Continuing Education</u>, which is headed by the Vice Rector for Continuing Education, is integrated into the administrative department Academic Services. SCE
 - o coordinates continuing education at ETH Zurich;
 - o supports the continuing education activities of professorships, institutes and departments;

³⁴ Art. 10a of the ETH Zurich Organisational Ordinance

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- advises employed persons, education providers, companies and professional associations on continuing education issues;
- o promotes cooperation between universities, the economy and society.

Organisationally, continuing education belongs to the area of teaching. The Rector is responsible for quality assurance in the area of teaching.³⁵

Personnel

Employees are key to the success of ETH Zurich; the institution's excellent achievements in research, teaching and knowledge and technology transfer are due to them. Employees are excellently trained, continually further their own development, and participate in ETH's success. Recruitment for and staffing of new professorships play an essential role in the development of research and teaching.³⁶

Instruments and processes of quality assurance and quality development

- Appointments procedure (professors)
- Tenure procedure (Assistant professors)
- Recruiting of doctoral students and other scientific staff
 - o Guide to recruitment and instruments to support persons responsible for recruitment
 - Special training courses for professors in the area of recruitment
- Processes for removal of employment contract time limits (naming of permanent scientific staff)
- Conferral of professorial titles (adjunct (titular associate) professors)
- Recruiting of technical and und administrative staff
- Onboarding process for new professors
- Appraisal interviews (annual)
- Range of continuing education courses run by the Executive Board domain's Personnel Development and Leadership unit
- Range of Eidgenössischen Personalamt [federal personnel office] continuing education courses
- Support for ETH Zurich professors and managers in their management task
- Annual Academic Achievements (AAA): Annual report on research activities and teaching at the professorship and department levels
- Employee survey
- Survey of scientific staff (monthly, aligned with the "life cycle" of doctoral students and postdocs)
- "Equality monitoring": Monitoring of the proportion of women at various academic levels
- Evaluation of the implementation of the Gender Action Plans in the departments
- Alignment of doctoral students' employment with matriculation and the aptitude colloquium

Organisation³⁷

- The Office for Faculty Affairs, which reports to the President, administers the appointments procedure and negotiations; tenure evaluations; and promotions.
- The <u>Consulting for Professors unit</u> reports to the Vice President for Personnel Development and Leadership and looks after professors during the negotiation (pre-onboarding) and on-boarding phases; assists them with their personal development during their time at ETH Zurich; and administers their retirement process.
- The <u>HR Consulting unit</u> reports to the Vice President for Personnel Development and Leadership and offers personnel guidance (for both superiors and employees) in the departments, the Executive Board domain, the central organs and the technology platforms. It is also responsible for vocational training; offers support in recruiting; looks after case management (monitoring of processes during illness); and designs HR policies.
- The <u>Development and Leadership</u> unit reports to the Vice President for Personnel Development and Leadership and offers a range of target-group-oriented development and lifelong learning courses to help individuals and teams fully utilise their potential at ETH and achieve top results in their further

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³⁵ Art. 9, Para. 4 (a) of the ETH Zurich Organisational Ordinance

³⁶ SDP 2021-2024, p. 48

³⁷ The five units under the Vice President for Personnel Development and Leadership commence operations on 1 January 2022.

- careers. The focus is cross-disciplinary competences, particularly leadership and career (Career Center).
- The <u>HR Operations</u> unit reports to the Vice President for Personnel Development and Leadership and runs the operational and administrative personnel processes, including payroll processes. It is also responsible for building and extending digital personnel processes in all Personnel Development and Leadership units.
- The <u>Diversity and Collaboration</u> unit reports to the Vice President for Personnel Development and Leadership. It promotes equal opportunity and inclusion and the increasing and utilisation of diversity, and conducts the associated monitoring processes. It advises ETH units and members on issues such as promotion of women, balancing career/studies and family, inclusive language and the fostering of an inclusive working environment. The unit also offers professional, comprehensible and confidential conflict management services for ETH members and students, including prevention measures (informal and formal phases).
- The <u>Staff Commission</u> represents the interests of administrative and technical staff with the Executive Board.
- The <u>University Assembly</u> is a body composed of representatives of the four university groups (faculty, students, academic scientific staff and technical/administrative staff) selected by ballot on the basis of parity.

Contact points

- The <u>Psychological Counseling Service</u> of the University of Zurich and ETH Zurich provides guidance to students and doctoral students in mental crisis situations.
- Ombudspersons are a general point of contact in cases of conflict which cannot be resolved through direct discussion, and in cases where there is suspicion of illegal conduct.
 Ombudspersons are both former ETH members and persons with no relationship to ETH.
- Trusted intermediaries (confidants) advise, support and mediate in conflicts related to good scientific practice.
- The <u>internal advice and conciliation service "Respect"</u>, part of the ETH Diversity Office, offers all ETH members, including students, help and guidance on the themes of bullying, harassment and discrimination. ETH also offers the possibility of counselling by an independent external body.
- The Reporting Office for Conflict Management takes reports in writing from ETH members regarding suspected inappropriate behaviour such as bullying, harassment or discrimination.
- Guidance options of the four university groups: All four university groups have established informal advice services for their members.

The Vice President for Personnel Development and Leadership is responsible for quality assurance in the area of personnel.³⁸

Infrastructure

ETH Zurich has modern infrastructure and proven technologies at its disposal, and offers internal services in an efficient and customer-oriented manner. It constantly anticipates and integrates the requirements of digitalisation.³⁹ The institution's spatial requirements continue to grow and change, driven by increasing student and employee numbers and academic planning. Internal and societal teaching and research needs which involve the latest technologies, new research emphases and new research locations present further demands on infrastructure, spatial development and services.

Instruments and processes of quality assurance and quality development

Real estate

- ETH Zurich real estate strategy
- Räumliches und finanzielles Gesamtkonzept [overall spatial and financial concept; in German] for the ETH Board; compiled every four years with annual updates
- Preliminary study with feasibility study and selection procedure

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³⁸ Art. 11c of the ETH Zurich Organisational Ordinance

³⁹ SDP 2021–2024, p. 48

- Project planning with preliminary project, construction project and permits procedure
- Call to tender and contract allocation
- Realisation with implementation project, realisation, launch and completion
- Regular audits by the ETH Board and the Swiss Federal Audit Office

Information and Communication Technology (ICT)

- Incident management (addressing user needs and countering all types of disturbance)
- Problem management (dealing with problems, from discovery to solution)
- Change management (making and checking adjustments to IT infrastructure)

Library

- Strategy of the ETH Library 2020–2024
- Process checks and adjustments while implementing this strategy
- External evaluation (2021)

Organisation⁴⁰

- The <u>Real Estate Management</u> department reports to the Vice President for Infrastructure. It is responsible for the timely provision of real estate and workspace infrastructure, and thus bears responsibility for implementing real estate strategy. Here it addresses both strategic and operative tasks, coordinates stakeholder groups (researchers, operations, other ETH units) and acts as proprietor's representative.
- The Facility Services and Engineering and Systems departments report to the Vice President for Infrastructure. They are responsible for the technical and infrastructure areas of building management. Facility Services coordinates the daily operation of the services required. Engineering and Systems ensures that building technology standards are up to date and are responsible for campus sustainability and workshop topics. Both departments are closely involved in Real Estate Management construction processes.
- The <u>departments</u> and other <u>Executive Board</u> units, including the <u>staff units</u> and <u>administrative</u> <u>departments</u>, assist Real Estate Management as user representatives during construction projects and through internal coordination of user needs. They are responsible for operational room management within departments, according to the competence of the respective department.
- The administrative department <u>Safety, Security, Health and Environment</u> (SSHE) provides guidance to ETH members on dealing with risks and dangers to people, infrastructure and the environment. The Head of SSHE serves as the Safety Officer of ETH Zurich.
- The <u>ETH Library</u> is the largest public scientific and technical library in Switzerland and is a national centre for scientific and engineering knowledge. It provides active support for teaching and research. To fulfil its national task the ETH Library is proceeding steadily with the digitisation of its collections and archives. With its strategy for 2020–2024 the Library intends to preserve its position as an independent and reliable entity, and make available comprehensive, relevant, trusted and reliable information to its clients now and in the future.
- <u>IT Services</u> supports teaching, research and administration with services in the area of information and communication technology. To do so it operates the required infrastructure, information systems and applications.
- <u>Campus Services</u> provides services in the areas of logistics, mobility, postal and parking; helps ETH organisational units with tasks such as publications, information exchange and events management; and (among other things) develops campus tours and other public group tours.
- The <u>ICT Commission</u> is headed by the Vice President for Infrastructure and advises the Executive Board on strategic questions in the area of ICT and deployment of ICT resources at ETH Zurich.
- The <u>Chief Information Security Officer</u> (CISO) coordinates information security measures at ETH Zurich, advises information owners and Information Security Officers in the departments and central

⁴⁰ Facility Services, Engineering and Systems, and Campus Services commence operations on 1 January 2022.

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organs, and reports regularly to the Risk Management Commission. The CISO belongs to the office of the ETH Secretary General.⁴¹

The Vice President for Infrastructure is responsible for quality assurance in the area of infrastructure.⁴²

Finance, controlling and compliance

Stable public funding, third-party funding and sustainable financial management are important guarantors of the international competitiveness of ETH Zurich.⁴³

Basis

The ETH Zurich Financial Regulations dictate the institution's financial governance policies. 44

Instruments and processes of quality assurance

- Budgeting process (annual financial planning)
- Medium-term financial planning (strategic four-year financial planning)
- Professorship planning (long-term planning)
- Management reporting (annually and for guarters 2 and 3)
- Risk management and internal control system (ICS)⁴⁵
- Application of the International Public Sector Accounting Standard (IPSAS)⁴⁶
- Revision monitoring
- ETHIS (ETH Information and Support system): The web portal for personal access to financial and human resources data

Organisation

- The <u>departments</u> administer their resources on their own responsibility. Academic units exercise financial flexibility to the benefit of teaching and research. Service-oriented units (administration, central organs) are subject to an annual controlling cycle.
- The <u>Controlling</u> department reports to the Vice President for Finance and Controlling. It supports, monitors and coordinates ETH Zurich financial management processes in close cooperation with teaching and research units and central organs. This includes ongoing optimisation of processes (e.g. through digititalisation) and the securing of level-appropriate financial transparency through suitable systems (SAP and the ETHIS information portal). A further focus is the provision of information for decision-making processes (e.g. management reporting).
- The <u>Accounting</u> department is responsible for implementing finance policy and addresses asset, finance and profit positions according to IPSAS accounting standards. The internal controlling system (ICS) for finance-relevant processes ensures proper bookkeeping and financial reporting.
- <u>Financial Services</u> is responsible for purchasing coordination, travel services, risk management, insurance and coordination with partner organisations.
- The <u>Risk Management Commission</u>, chaired by the Vice President for Finance and Controlling, advises the President and the Executive Board on all issues of risk management, risk finance and insurance. It determines procedures in the areas of risk assessment, analysis, response and controlling and supervises these.
- The <u>Investment Commission</u> advises the Vice President for Finance and Controlling on decisions related to investment strategy and the administration of third-party funds by external asset managers, and monitors compliance with investment strategy.

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⁴¹ Art. 5 of the Directive on Information Security at ETH Zurich [*Informationssicherheit an der ETH Zurich*; in German]

⁴² Art. 11b of the ETH Zurich Organisational Ordinance

⁴³ SDP 2021-2024, p. 17

⁴⁴ Art. 3 of the Financial Regulations of ETH Zurich of 01.01.2019

⁴⁵ Art. 35a of the ETH Law

⁴⁶ Accounting handbook for the ETH domain [*Rechnungslegungshandbuch für den ETH-Bereich*; in German] of 4.10.2019

The Vice President for Finance and Controlling is responsible for quality assurance in the area of finance and controlling. ⁴⁷

⁴⁷ Art. 11a of the ETH Zurich Organisational Ordinance Nie, 19.10.2021

5. Appraising the utility of the quality assurance system and its development

Appraisal of quality-related processes

At ETH Zurich processes relevant to quality are scrutinised regularly for their utility and efficiency. When action is indicated, the situation is addressed in the respective departmental and central organs and in institutionalised meetings where representatives of departments or stakeholder groups meet with the entire Executive Board or with individual members of the Executive Board. Stimuli for process change can also come from outside. A current example is the redefinition of admission to Master's degree programmes, which has become necessary due to a strong increase in the number of applications. This project involves the defining of qualitative and quantitative goals, and the design of efficient, effective processes for admission to Master's degree studies.

To optimise complex processes, working groups are deployed which are normally composed of specialists and representatives of the affected groups. If changes require the revision of an ordinance, the Executive Board conducts a broad-based consultation process involving departments, university groups, administrative departments and staff units. The ETH Legal Office and (depending on the extent of alteration) bodies whose input via an official consultation process would be desirable (Federal Chancellery; Federal Office of Justice; State Secretariat for Education, Research and Innovation; EPFL and the ETH Board) peruse the coherence and hierarchies of the new policy. Only after any official consultation process involving these bodies and any changes does the Executive Board adopt the corresponding regulations and authorise their entry into force.

Internal instruments for appraising the quality assurance system

The Executive Board has institutionalised instruments and discussion formats at its disposal which help it to ascertain whether the quality assurance system is functioning optimally. The following instruments address cross-sector topics:

- Revision monitoring document (annual report on the implementation of recommendations resulting from external checks by the Swiss Federal Audit Office and the ETH Board's internal audit)
- Financial report (annual and quarters 2 and 3)
- Annual Academic Achievements report (annual, declaration of achievements in teaching, research and academic services; on request)
- Diversity monitoring (every two years)
- Sustainability report (every two years)
- Risk assessment for investment controlling (annual)
- Report of ombudspersons (annual)
- Report by trusted intermediaries (confidants) (annual)
- Student survey (every five years)
- Employee survey (every four years)
- Doctoral student survey (aligned with the personal doctoral cycle)
- Survey of professors
- Annual dialogue between the Executive Board and each of the 16 departments
- Institutionalised discussions between the Executive Board, the University Assembly and university groups
- Quarterly reporting on the real estate project portfolio (gives the Executive Board a quick overview of construction projects)

In 2008 and 2013 ETH Zurich voluntarily underwent an external quality audit of its quality assurance system by an international team of experts. In 2020/21 it obtained its first accreditation as per the Federal Act on Funding and Coordination of the Swiss Higher Education Sector (Higher Education Act (HEdA))

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• Instruments of higher authorities for appraising the quality assurance system

To scrutinise overarching goals and check the legal efficacy and utility of the use of funds, higher authorities have access to institutionalised instruments and discussion formats which help them to ascertain whether ETH Zurich's quality assurance system is functioning optimally.

Account is given in the following frameworks regarding the status of fulfilment of the strategic goals of the Federal Council for the ETH domain:

- An annual written report (Annual Report of the ETH Board)
- Interim evaluation by international experts in the mid-planning period and in a final report at the close of the planning period. The ETH Board is responsible for annual and final reporting on strategic goals. The Federal Council, represented by the State Secretary for Education, Research and Innovation, is responsible for the interim evaluation.

Account is given in the following frameworks regarding the status of fulfilment of the strategic goals of ETH Zurich:

- Annual dialogues (in June) between the ETH Board and ETH Zurich. In the context of strategic
 controlling, the dialogue serves as a context where ETH may give feedback on the status of
 achievement of the agreed goals. It is also an opportunity for open exchange of ideas and information
 regarding current issues and university development initiatives.
- The annual ETH Zurich Report, compiled according to International Public Sector Accounting Standards (IPSAS)
- An annual report on implementation of professorship planning
- The ETH Zurich Sustainability Report, compiled according to the internationally recognised standards of the Global Reporting Initiative (GRI), which also requires reporting on achievement of strategic goals

The legality of usage of funds in the departments and central organs is checked regularly by both the <u>Swiss Federal Audit Office</u> and the <u>Internal Audit team of the ETH Board</u>. The results of these audits are reported to the Swiss Parliament and published in summarised form. The ETH Zurich Executive Board oversees the implementation of recommendations stemming from external checks in the framework of annual revision monitoring.

If there is a change of ETH or EPFL President, the Internal Audit team of the ETH Board will also require a <u>transition review</u> conducted by an independent body to investigate the areas of governance, finance and controlling.

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6. Responsibility for the internal quality assurance system

To supplement the Guide, the following table names the functionaries who are responsible for quality assurance at ETH Zurich.

Responsibilities of functionaries for quality assurance

(without organisational units or governing bodies)

In accordance with

- ETH Law
- ETHZ-ETHL Ordinance
- ETH Professorial Ordinance
- Personnel Ordinance for the ETH Domain (PVO-ETH)
- ETH Zurich Organisational Ordinance
- ETH Zurich Financial Regulations
- Department bylaws

Area of responsibility ⁴⁸	Functionary (central)	Functionary (decentral)
Overall quality assurance	President (as Chair of the Executive Board, which has overall responsibility for quality assurance)	
Strategy	 President (strategy process, professorship planning) 	
Risk management	President and Vice President for Finance and Controlling	
Legal matters	Secretary General and Head of the Legal Office	
Cross-sectional topics	 Executive Board delegates for Sustainability Digital transformation Medicine 	
Communication	Head of Corporate Communications (internal and external communications strategy)	
Information security	- Chief Information Security Officer	
Conflict resolution	- ETH Zurich ombudspersons (on a mandate basis; independent contact point in cases of conflict with superiors or conflicts which cannot be resolved by superiors)	Superior
Whistleblowing	If the person prefers not to approach a superior: - ETH Zurich ombudspersons - Vice President for Finance and Controlling	Superior

⁴⁸ Order of central functionaries: First the President and the overall Executive Board Nie, 19.10.2021

Area of responsibility49	Functionary (central)	Functionary (decentral)
Teaching	 Rector (overall responsibility for quality assurance in teaching) Vice Rector for Study Programmes (legal matters in the area of teaching) Vice Rector for Curriculum Development (development of teaching policy and internal quality standards for teaching) Vice Rector for Doctoral Studies (legal matters in the area of doctoral studies; contact point) Vice Rector for Continuing Education (continuing education strategy, legal matters in the area of continuing education) Heads of the following units: Academic Services	 Heads of Department (professorship planning) Directors of Study (proper implementation of study programme regulations; quality assurance in teaching for one or more degree programmes) Lecturers of all categories (quality assurance for one or more courses) Professors (supervision of doctoral students) Study programme coordinators (quality assurance in department teaching operations) Educational Developers (guidance to lecturers in the areas of university teaching and new teaching technologies) Assistants of all categories (guidance of students in the areas of exercises, scientific papers and projects) Students (evaluation of teaching)
Research	 Vice President for Research (strategic steering and promotion of quality assurance in research) Delegate for Medicine of the Vice President for Research (secondary appointment) Animal Welfare Officer Trusted intermediaries (on a mandate basis; independent contact persons for questions of integrity in research and/or where there is suspicion of dishonest scientific conduct) 	 Heads of Department (strategic development of the research portfolio; professorship planning; perusal of applications for scientific apparatus) Professors (promotion of the respective discipline through high-quality scientific research; evaluation of scientific papers; design, administration and development of the professorship; fostering of young scientists) Senior Scientists and permanent scientific staff (supervision of doctoral students; evaluation of scientific papers; fostering of young scientists) Scientific staff on short-term contracts (supervision of students' scientific projects/papers)

⁴⁹ Order of central functionaries: First the President and the overall Executive Board Nie, 19.10.2021

Area of responsibility50	Functionary (central)	Functionary (decentral)
Knowledge and technology transfer	Vice President for Knowledge Transfer and Corporate Relations (strategic steering and promotion of relationships between ETH Zurich and its partners in knowledge transfer matters; quality assurance in knowledge transfer	- Professors (dissemination of research results; utilisation of rights accruing from research activities)
	and corporate relations) - Head of ETH transfer (assists ETH members with questions regarding research contracts with industry, inventions; patent applications and licensing; helps young entrepreneurs in the founding phase of spin-offs) - Head of Industry Relations (cooperation with industry) - Head, National Innovation Initiatives (Head of the Space start- up programme; participation in Switzerland Innovation)	
Personnel	 President (appointments and promotions) Vice President for Personnel Development and Leadership (implementation of personnel policy for technical, administrative and scientific staff; assists the President in implementing personnel policy for professors; personnel management and personnel development; implementation of and adherence to personnel regulations) Heads of the following units: Consulting for Professors unit (guidance to professors and Executive Board members in matters ranging from hiring and onboarding to ETH development to retirement and beyond; individual development of professors; secondary employment; sabbaticals; dual career matters) Personnel management (personnel guidance for departments and central organs; vocational training; recruiting; case management; personnel policy) Development and Leadership (range of development and lifelong learning courses for individuals and teams; Career Center) HR Operations (personnel administration; payroll; digitalisation, systems and data) 	 Heads of Department (sit on appointment committees) Departmental personnel managers (personnel administration; staff recruiting, retention and departure) Superiors in all categories and areas (employee evaluation and promotion)

 50 Order of central functionaries: First the President and the overall Executive Board Nie, 19.10.2021

	Diversity and Cooperation (promotion of inclusion, equality of opportunity and diversity at ETH Zurich; informal and formal conflict management; prevention)
Infrastructure	- Vice President for Infrastructure (construction project management; building and laboratory technologies; building management; ICT management; knowledge resource management; operational safety and environmental protection) - Heads of the following units: Real Estate (makes available approved ETH Zurich spatial resources and building infrastructure in a timely and economical manner) Facility Services (coordinates the services required for daily operation of buildings) Engineering and Systems (maintains building technology standards and campus sustainability) IT Services (information and communication technology services) ETH Library (assures information flow for ETH members and students, other universities, the public, and research and development enterprises) Safety, Security, Health and Environment (guidance on dealing with risks and hazards for the protection of people, infrastructure and the environment; implementation of the corresponding measures)

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Area of responsibility ⁵¹	Functionary (central)	Functionary (decentral)
Finance	 Vice President for Finance and Controlling (financial strategy; financial planning; financial management; budgeting process; implementation of risk management) Heads of the following units: Controlling (supports, monitors and leads ETH Zurich management processes) Accounting (implements financial policy and handles assets, finance and earnings according to international public sector accounting standards (IPSAS)) Financial services (purchasing coordination; travel services; risk management insurance) Area managers Executive Board members (view financial and personnel data in all management areas) Budget managers Unit heads Staff unit heads Heads of teaching and research units outside the departments Unit controllers Executive Board budget coordinators 	- Responsible persons in the following areas: O Heads of Department (utilisation of the department's allocated budget including adherence to budgetary specifications) - Budget managers O Institute heads O Professors - Department controllers (assist their Heads of Department in orderly financial management in the department, particularly autonomous resource management)

⁵¹ Order of central functionaries: First the President and the overall Executive Board Nie, 19.10.2021