

# Operational Plan 2022

Department of Information Technology

Faculty of Science and Technology Department of Information Technology

2021-12-09

IT 2021/113

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# Introduction

The work environment survey conducted at the department in spring 2019 revealed that staff would like greater insight into operational goals, strategies and planning. To this end, the department began producing an annual operational plan from financial year 2020. During spring semester 2021, the faculty drew up a Goals and Visions document and instructed the departments to write operational plans based on these goals and visions.

The Department of Information Technology has chosen to use the template provided by the faculty. The following individuals, usually with the support and assistance of their workgroup (see <a href="https://www.it.uu.se/about\_us/organisation/groups">https://www.it.uu.se/about\_us/organisation/groups</a>) had the opportunity to contribute to formulating the text:

- Head of Department
- Head of Division
- Head of the Administrative Support Unit
- Head of Education
- · Head of Research
- Director of Doctoral Studies
- Collaboration Coordinator
- Equal Opportunities Officer
- Communications officer

The process of preparing the operational plan and attached action plans included their discussion by the management group on 30 November and adoption by the departmental board on 9 December.

In addition to the activities described in this document, the work done within SNIC, UPPMAX and ENCCS are described in separate operational plans.

Appendix A contains the department's joint account coding from 2018 to 2022.

# Department measures to achieve the goals of the Faculty of Science and Technology

#### 1.1 Goals related to research

Five faculty-level goals are described (see TEKNAT 2020/31 for details).

# 1.1.1 Goal 1: Continue developing our research based on recognised excellence

The department will continue working proactively to encourage submission of grant applications to relevant external calls. This includes our internal process for soliciting, reviewing and improving KAW applications for the TekNat selection, our use of writing clubs for Swedish Research Council grants in each division, and our department-level (PAP) discussions to

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identify and support SSF-FFL and WAF applicants. We also encourage and coach or support faculty members in submitting ERC applications on all seniority levels.

The department will continue to support research that has an awareness of equal opportunities. The goal is to support integration of an equal opportunity perspective in research activities at the department. Strategies to achieve this include organising a department strategy day on research focused on equal opportunities, establishing collaboration with the Centre for Gender Research, and setting up a new call for funding to support formulating and working with aspects related to equal opportunities in research project proposals. Another objective is to actively use an equal opportunity perspective with career development, including with support for early career staff and researchers.

# 1.1.2 Goal 2: Develop broad research initiatives proactively

The department has identified cybersecurity as an important area for both the department and society at large. As a result of this, we are consolidating and clarifying our efforts (currently spread out across all five of our divisions) using an existing cross-division mechanism referred to as an *arena*, which serves as a forum for discussion and a successful seminar series. This effort is led by Professor Christian Rohner. We have also invested significant institutional resources into this (a start-up package from 2020 to 2024 for a new associate professor, André Teixeira. Teixeir is an adjunct professor (2022–2023) with strong industry ties. A graduate school that will be launched in 2022, bringing together our approximately 8 existing doctoral students in cybersecurity with 2 newly funded ones).

The goal is to build a thriving research environment for cybersecurity.

The department also recruited five postdocs in 2021 within the slightly broader area of "IT for a sustainable and secure society", using the bulk of the extra funding we received in spring 2021 from VP21 of TekNat: three of these have cybersecurity within their project scope.

#### Indicators:

- Number of Swedish Research Council/ERC/EU/VINNOVA/SSF grants in the area of cybersecurity.
- Number of Doctoral students and MSc theses on cybersecurity.
- Number of industry collaborations on cybersecurity.
- Number of seminars on cybersecurity, and seminar attendance across divisions.

Goal 1 directly supports Goal 2 by providing department-level coordination to identify and support shared cybersecurity efforts that may be appropriate for large-scale grants.

# 1.1.3 Goal 3: Expand sources of research funding

See Goal 2: After successfully achieving (in 2020) two of our three departmental objectives, namely establishing research programmes in AI and in computing education, we are now diversifying our research into cybersecurity, our third objective, by bootstrapping it with faculty funding.

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Increase the number of external grants and the share of external grants linked to private sector, government agencies etc.

#### Activities:

- The department will continue working proactively to encourage submission of grant applications to relevant external calls. (See Goal 1).
- The collaboration coordinator provides information via LäsIT and staff meetings about current calls for collaboration and outreach projects, for example from Vinnova and SSF.
- The department will provide information about and work for increased IT participation in the faculty's strategic partnerships, leading to joint applications through meetings, seminars and visits.

#### Indicators:

 Number of Swedish Research Council/ERC/EU/VINNOVA/SSF/KAW/KKS (and other foundations) applications and grants.

#### Sub-goals:

- Increase external grants.
- Increase the share of external grants connected to the private sector, government agencies etc.

### 1.1.4 Goal 4: Ensure access to advanced research infrastructure

The department will remain vigilant about applying to calls on research infrastructure (such as *SSF Research Infrastructure Fellows*) and data storage, so that our needs can be satisfied.

The department hosts the *Swedish National Infrastructure for Computing* (SNIC) and UPPMAX, which is UU's local node in SNIC and UU's local provider of high-performance computing and large-scale storage resources. National computing resources are currently facing major changes both in terms of organisation and funding. This affects SNIC directly and UPPMAX through SNIC. The department will continue to support both organisations throughout this rather complicated transition period in consultation with the faculty and university levels. A decision about the new organisation will be taken in the spring of 2022. However, operational decisions have been taken to ensure the national services can be kept up and running transparently for the end users during this time. This also provides time for finding the new role for UPPMAX in a potentially different national landscape.

#### Sub-goal:

• Increased access to and use of infrastructure for both research and teaching.

# 1.1.5 Goal 5: Adapt research support to current needs

The department has developed a career support programme for our tenure-track assistant professors, including grant clubs.

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#### Indicators:

- Number of our assistant professors participating in the departmental / TekNat / UU support programmes.
- Number of submitted / accepted grant applications by our assistant professors.

# 1.2 Goals related to programmes

Five faculty-level goals are described (see TEKNAT 2020/31 for details).

# 1.2.1 Goal 1: Continue developing our courses and programmes based on recognised excellence and demand

We believe that many students are looking for new types of instruction after a year and a half of the pandemic. Many teachers have also indicated that they have learned new and better ways of handling certain teaching components online.

#### Activities:

- Investigate the extent to which students want to use a mix of in-person and online instruction.
- Conduct a survey of (and subsequent workshop for) our teachers to compile their experiences from online teaching and how they can be used in the future.

We know that many students are experiencing issues with taking three courses simultaneously, for example due to scheduling conflicts and difficulties prioritising.

#### Sub-goals:

Offer bigger courses (ideally 7.5 HEC but otherwise 10 HEC), and explore whether
it is possible to arrange teaching in blocks guaranteed to be free from scheduling
conflicts.

From an equal opportunity perspective, the department is working to provide diversity-aware education that creates a better learning environment for everyone. There are three objectives: apply a diversity perspective when supporting students, provide diversity awareness training to teaching faculty and support changes in the introductory courses for teachers. Strategies to achieve this include working to include a lecture on diversity and discrimination in introductory courses of BSc and MSc programmes and organising equal opportunities training for teachers and teaching assistants. Another objective is to create a better doctoral education for everyone. The goal is for doctoral students and supervisors to have an awareness of equal opportunities and to create an even playing field where all doctoral students at the department have the same opportunities. Strategies to achieve this include organising seminars on equal opportunities that could be part of doctoral studies.

# 1.2.2 Goal 2: Base our programmes on research

Information technology is becoming increasingly relevant to more and more parts of TekNat (programming, machine learning, AI etc.), which is gratifying and increases the need for our courses and programmes throughout the faculty. However, faculty grants for research are not

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keeping pace, creating a conflict that will ultimately make it impossible for us to realise this goal. To achieve the goal, the department must work to change how research funding from the faculty is awarded.

# Sub-goals:

• increase the award of faculty-funded research to enable the department to recruit excellent staff on internationally competitive terms.

# Sub-goals:

 The department will ensure access to teachers who actively research and are wellestablished in their research domains through an improved balance between teaching obligations and faculty-funded research.

#### Activities:

- Actively decline teaching assignments that are not initiated by or are not strategically important for the department.
- Reduce the number of 5-credit courses to reduce the load on the department's teachers.

## 1.2.3 Goal 3: Our programmes and courses are to have a direct link to the labour market

#### Activities:

- Hire a senior lecturer who can begin collaborations with companies that use adjunct teachers. This can help us offer modern courses and programmes in software engineering that are relevant to the industry.
- Instruct all teachers to have at least one guest lecturer or project in every course that illustrates how it is linked to working life. For example, we can work with the labour market representatives on our advisory councils.
- The collaboration coordinator is to maintain an up-to-date list of collaboration and outreach projects at the department and the kind of collaboration they involve (course participation, degree project, collaborative projects etc.) to simplify sharing contacts for guest lectures etc.

#### Indicators:

Number of advisory councils linked to working life.

#### Sub-goals:

- At least two of our software engineering courses are taught in part by professionally active adjunct teachers in 2022–23.
- Three-quarters of our courses have an external guest lecturer or project from industry.
- All of our advisory councils have a direct link to the labour market.

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## 1.2.4 Goal 4: Ensure the continued development of teaching skills and methods

Currently, there is no central, well-functioning incentive for following course design guidelines, for example. Our goal for 2022 is to create this type of incentive locally in the department. We are understaffed, causing problems in this respect. A teacher wanting to expand their skill set might have to refrain from research, which contradicts goal 2.

#### Activities:

- In conjunction with our continuing organisational changes at the bachelor and master's levels, we are looking into adding a criterium for allocating course/teacher resources that rewards teaching that follows centrally decided directives.
- Earmark funds centrally for teacher skills development and encourage teachers to apply for these funds.
- Hold lunch seminars on teaching methods once a month.

# 1.2.5 Goal 5: Offer lifelong learning

The department faces a goal conflict, where the ambition of offering lifelong learning must take a backseat to the ambition of creating a good balance between teaching obligations and faculty-funded research, which ensures access to teachers with a strong connection to research. Despite this conflict, the goal of offering lifelong learning is important, and there is significant interest in these courses. To this end, the department plans the following.

# Activities:

- Offer businesses and government agencies contract courses for lifelong learning, skills development and new technologies.
- Support the university/faculty in developing forms and methods for sustainable lifelong learning.

# Indicators:

• Number of contracted courses and lifelong learning courses.

# Sub-goals:

• Hold 1–3 contracted and lifelong learning courses in 2022. With better allocation of research funding, this number could be significantly higher, especially considering the interest from teachers in the department.

# 1.3 Goals related to cooperation and collaboration

Three goals are described at the faculty level (see TEKNAT 2020/31 for details).

# 1.3.1 Goal 1: Develop our internal cooperation and with other higher education institutions

If the faculty moves towards larger modules for master's courses, we can develop internal collaboration by simplifying sharing courses between programmes, and external collaboration, since several other higher education institutions use the larger module size approach.

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# 1.3.2 Goal 2: Develop our collaboration with external actors

#### Activities:

- The collaboration coordinator arranges and shares opportunities for and information on collaborative projects companies and the public sector (individual contacts, national networks/programmes, the university's/faculty's strategic partnerships) aimed at increasing the department's share/participation in them by:
  - Participating in, conveying information, and organising informational meetings and discussions with the University's/faculty's existing and new strategic partners and other actors from the private sector.
  - Providing information on collaborations at staff meetings and regularly in LäsIT (the department's international news forum).
- Participate in public events, such as SciFest and the New Ångström exhibition for schools and the public.
- Help the department's researchers better understand the importance of and opportunities for collaboration through:
  - o a strategy day focused on collaboration.
  - a seminar focused on collaboration within the department's career programme for associate senior lecturers.
- The collaboration coordinator helps with drawing up and checking agreements for collaborative projects in accordance with the department's established collaboration procedure to facilitate and secure researchers' rights and to avoid legal issues for the University.
- To increase diversity among our cohort of students, we should investigate whether we can involve doctoral students in organising events for secondary schools.

We can use our external communication channels (website and Facebook) to reach external parties with specific messages or regularly updated information.

#### Activities:

- Explore the need for and potential of creating a specific area on the website aimed at external parties.
- Highlight good examples of collaboration with external parties.

## 1.3.3 Goal 3: Develop guidelines for assessing collaboration qualifications

# Activity:

 The collaboration coordinator and appointment committee propose criteria for describing and assessing collaboration skills to emphasise the importance of these skills when department's recruitments require them.

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# 1.4 Goals related to the faculty as a workplace

Three goals are described at the faculty level (see TEKNAT 2020/31 for details).

#### 1.4.1 Goal 1: Provide a good work environment with equal opportunities for everyone

In 2022, the department continues dealing with problems resulting from the pandemic, primarily related to preparing the physical work environment should working from home continue and to the psychosocial work environment with the transition back to campus-based working. The department will hold several sessions to provide feedback on the perceived work environment and will adapt our activities to the current situation. There will also be a separate

follow-up of the work situation for doctoral students. This applies both to how work proceeded during while working from home but also the psychosocial component.

Communication initiatives at the department can contribute to a good work environment by offering specific and clear information channels. Informational texts should be formulated to not discriminate and be based on the department's and faculty's goals for equal opportunities.

#### Activities:

- Publish relevant information in a clear information channel to which all staff have access in a non-discriminatory way.
- Explore more opportunities for communication to directly contribute to a good work environment.
- Enhance the capacity of the equal opportunities group to work as change agents. This is intended to make the group better able to serve as change agents at the department and to learn about equal opportunities. Strategies for achieving this include: organising an annual equal opportunities retreat, organising equal opportunities days, organising equal opportunities fikas, funding projects on gender mainstreaming and equal opportunities, instituting measures to inform about and prevent harassment and sexual harassment.
- Support gender mainstreaming efforts. The goal is to raise organisational awareness of gender issues. Strategies for achieving this include supporting staff on parental leave and working to increase representation of women at different career stages.
- Safety inspections. A physical safety inspection is planned for May 2022, provided that the situation with the pandemic permits it. The safety inspection will focus on the indoor climate, noise and lighting.
- Information on the organisational and social work environment. The department is planning organised training sessions for leadership/managers on the organisational and social work environment for the 2022–2023 academic year.
- *Introduction of new staff*. Department-specific support material for a good introduction for all new staff will be ready at the beginning of the 2022 spring semester. A review of new staff onboarding is a key component of the measures resulting from the spring 2019 work environment survey.

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- The work situation for doctoral students. We will continue reviewing the work situation for our doctoral students. This is part of efforts with the new GU organisation. Reviewing the work situation of doctoral students is a key component of the measures resulting from the spring 2019 work environment survey and of the follow-up of the recently completed doctoral studies evaluation.
- Evacuation drill. The drill is expected to be held once a year within campus management, which will manage it. Given the move to Building 10, an evacuation drill should be held no later than March 2022.

## 1.4.2 Goal 2: Recruit prominent research and teaching staff

Improving the balance between teaching obligations and faculty-funded research will allow the department to attract, hire and ensure access to teachers closely connected with research and that are well established in their research domain.

#### 1.4.3 Goal 3: Provide good career opportunities for our research and teaching staff

The rapid increase in the department's teaching obligations has allowed research and teaching staff to acquire more teaching qualifications. The department also needs to achieve a balance between its educational obligations and research funding that creates more opportunities for staff to acquire research qualifications.

# 1.5 Goals related to internationalisation

Three goals are described at the faculty level (see TEKNAT 2020/31 for details).

#### 1.5.1 Goal 1: Continue developing forms of internationalisation

#### Indicators:

- Number of doctoral students visiting from another country for at least two weeks per year.
- Number of international outgoing postdocs and incoming international postdocs.
- Percentage of international top-ranked applicants (with a non-Swedish doctorate) on average for our faculty positions.

#### 1.5.2 Goal 2: Improve conditions for international staff and students

The department will strive to facilitate international short-term visits, especially of doctoral students, through co-funding.

Departmental communications can help identify relevant information for international staff and students. Housing, travel and generally useful information should always be available in English. The communications officer can also help improve existing information so that it remains relevant over time.

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#### Activities:

- Make sure that all information for international staff and students is up-to-date and covers the most essential needs.
- Explore potential improvements to information currently provided to international students, in consultation with study counsellors and the IT Office.

# 1.5.3 Goal 3: Reduce language barriers

The department will continue translating all new documents into English and translate or summarise in English the remaining untranslated documents.

The department will continue encouraging its foreign-born staff to take the Swedish for Academics courses offered by UU to facilitate their integration.

# 1.6 Goals related to the faculty's place in the world

Two goals are described at the faculty level (see TEKNAT 2020/31 for details).

# 1.6.1 Goal 1: The faculty takes on relevant global and local challenges

The department will continue investing in sustainability and cybersecurity to on important global challenges.

# 1.6.2 Goal 2: The faculty takes advantage of the opportunities offered by digitalisation

The department will increasingly use videoconferencing to bring a wider range of guest speakers to our seminar series and courses.

# Indicators:

- Percentage of seminars given by remote speakers.
- How often do we participate as invited remote teachers?

Departmental communications can contribute by identifying and potentially replacing outdated modes of disseminating information with digital options. The communications officer can also assist and support staff looking for digital ways of carrying out their work, if requested.

#### Activities:

- Publish information first and foremost in digital channels.
- Explore new ways of using digital channels for collaboration and sharing information within the department.

# 1.7 Goals related to the future and regular development

Two goals are described at the faculty level (see TEKNAT 2020/31 for details).

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# 1.7.1 Goal 1: Stay abreast of national and international developments

The department will continue proactively reaching out with its research and visibly participating in current issues. For example, in 2021 we spent some of our strategic faculty funding on the Crush Covid project.

# 1.7.2 Goal 2: Regularly reassess our activities and operations

The department will continue reassessing its priorities. This has included identifying and intensifying three strategic research areas over the past few years: AI (new programme and recruitment), computing education (new programme and recruitment), and cybersecurity (recruitment). We aim to continue this success by identifying what is needed to find our next focus area and how to get all divisions to periodically revise their internal funding processes. Communication efforts and the role of the communications officer in public activities are continually being developed as needs change over time. It is important to take advantage of the

meetings and gatherings held at the University to keep up with the latest developments and learn from colleagues.

# Activities:

- Participate in informational meetings and other development opportunities for communications officers in the University.
- Identify and propose suggestions for developing external courses or freestanding courses.

# 2. Other goals of the department

#### 2.1 Doctoral studies

Doctoral studies are regularly reviewed, such as when:

- the annual updating of individual study plans with the help of a jointly completed progress matrix
- senior group meetings for each doctoral student
- when supervisor groups meet.

The department has developed a planning process for recruiting doctoral students. The process is intended to ensure that our advertisements for doctoral positions reach a wide audience and that we apply a recruitment process based on qualifications. The process is used when admitting and hiring doctoral students in all the department's doctoral subject areas. Before advertising a position, a search committee produces a knowledge profile and criteria for how to assess applicants for the doctoral position. This provides a solid basis for formulating the

advertisement for the position, which also is to incorporate an equal-opportunities perspective. Then the search committee conducts a two-step interview and ranks the candidates. When the position is filled, the personnel administrator helps in onboarding the doctoral student to ensure the best start and warmest welcome possible.

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The department is working to improve opportunities for doctoral students to plan their departmental duties, such as directors of studies and teaching teams helping them plan their teaching. The goal is to allow doctoral students to plan their time more efficiently, so that they can focus on their research and participate in conferences during periods when they are not teaching.

We have noted declining interest among doctoral students over the years in participating in collegial activities in the department. It should be possible to boost interest by making involvement more valuable. The department feels that the current rules for compensation of time and extension of doctoral studies for such things as board work are clearly followed, but this could likely be improved. Discussions are ongoing on how to make these kinds of roles more attractive, for example, whether some doctoral student representation work can count for the 20% of departmental duties.

It is an informational challenge to clarify the importance and advantages of becoming involved, so that more doctoral students become active; the alternative is the risk of overusing the few doctoral students who show interest. One way to start would be to bring together doctoral students for discussions on how they would like to get involved and be compensated.

The department encourages additional training for supervisors beyond the mandatory supervisor training. The department should ensure that all doctoral subjects have groups of supervisors for sharing experiences, something that has proven very positive when it has occurred. Supervisor groups can serve as a forum for discussing questions about doctoral students, expectations supervisors have on one another and the division of responsibility. For example, how to set clear milestones, maintain the quality of papers and requirements for authorship.

#### 2.2 Communication

In addition to the faculty's goals, communication at the Department of Information Technology has several of its own commitments that are expected to be implemented.

#### 2.2.1 Communications in 2022

- Facebook: posts about our research and events ongoing
- Updates online with focus on prior to the start of the semester ongoing
- External news online via Retriever and LäsIT ongoing
- Popular science research interviews every other month
- Review of information on MP prior to each semester
- Communication planning meetings head of department ongoing
- Communication planning meetings head of division ongoing
- Contribute to internal communication news MP blog ongoing
- Contribute to LäsIT newsletter every week
- Publication digital screens ongoing
- Contribute to department's staff meetings ongoing

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# 2.2.2 Projects & events spring 2022

- Create content and participate in SciFest.
- Participate and help with the inauguration of Building 10 with banners, content and online marketing of the event.
- Begin exploring what is necessary to transfer all information on the website to a new platform.
- Analyse and evaluate the test period for Slack.
- Investigate new approaches to updating the website.
- Develop and produce a new collaboration and outreach procedure for example, what applies when external parties want to visit our premises.

# 2.2.3 Projects & events autumn 2022

- Plan and try to contribute to having more participants at the next SciFest.
- Potentially move to a new website platform.
- Explore alternatives to Slack if it does not live up to expectations.

Revise goals and strategies for both internal and external communication.

#### 2.3 Work environment

Everyone with personnel responsibilities will conduct annual employee dialogues according to a specific template so that we can cover the entire staff. The outcome of these discussions will be followed up and discussed among the management group. This will allow us to identify signs of overload, stress, illness and other issues at an early stage, both at the individual and group level. The discussions are also intended to identify employees who have undergone leadership or supervisor training. The next round will be March–April 2022.

For doctoral students, the annual employee dialogue is split into two parts: in conjunction with writing a new individual study plan (ISP) and with the senior group's follow-up meeting for doctoral students.

Time for employee dialogues will be included in staffing plans at the division level. The head of division, others with personnel responsibility and supervisors are to set aside time to plan, implement and follow up structured employee dialogues and for unplanned discussions of a similar nature throughout the year. Those with personnel responsibility are to share matters addressed in the discussions that impact the budget with the head of division or head of department.

#### Mentor programme

The mentor coordinator assigns a mentor to everyone hired at the department for a period of at least one year.

# Language teaching

All new employees who do not speak Swedish are to be encouraged to attend instruction in Swedish.

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#### Work environment survey and health profile

A work environment survey and a health exam are conducted every five years. Separate work environment surveys and follow-ups are conducted as needed. The most recent regular work environment survey and health check-up were conducted in April/May 2019, when a work environment survey was carried out. All staff were also offered a health check-up from the occupational health service at that time. In addition, all UU staff are offered a health check-up the years they turn 50, 55 and 60.

#### Leadership training for managers

All staff with management responsibilities are offered and encouraged to attend leadership training, such as heads of department, heads of division, directors, heads of administrative support, directors of studies, heads of education, heads of research, and research supervisors. The goal is for at least 90% of staff with management responsibilities to attend training. Follow-up is to be completed by 31 December each year.

# Supervisor training

Doctoral supervisors and degree project supervisors should attend supervisor training. Serving as principal supervisor for a doctoral student requires completion of supervisor training. The goal is for at least 90% of all doctoral supervisors to have completed training. Follow-up is to be completed by 31 December each year.

#### First aid training

Every other year, employees are offered first aid training. Both basic training and more advanced training are offered. The next training session is planned for autumn 2022, unless the pandemic makes this impossible.

# Wellness

As preventive care, wellness programmes are offered to all staff, including subsidised physical training, one hour of wellness activities per week during working hours, massage, and fruit baskets in the staff room. The department also promotes organising wellness activities at the department.

# Preventive measures in the physical work environment

The department contributes with workplace design, procurement of assistive devices etc. Modifications are made as needed as soon as possible for both staff and students. Safety inspections are conducted regularly. The results are compiled, evaluated and followed up.

#### Social & cultural activities

The department arranges and supports various social and cultural activities.

# Stress & conflict management

The department offers training on managing the work situation, especially in terms of stress and conflicts. This can be offered in groups or individually.

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# Equal opportunities

The equal opportunities aspect is an important element of work environment management. The department's equal opportunities group monitors the issue and provides information about their work. Equal opportunity initiatives are relevant to both students and staff.

#### Evacuation drill

The drill is expected to be held once per year within the Campus Management area. It is managed by Campus Management. Given the move to Building 10, an evacuation drill should be held no later than March 2022. The evacuation plan is available online: https://www.polacksbacken.uu.se/security/evacuation-first-aid/

# Fire safety checks

The Security and Safety Division conducts a fire safety inspection once per quarter.

#### Work environment group

The group meets at least three times per year. Members: safety representatives, head of department, administrative manager, personnel administrators, student representative. The work environment group coordinates and provides information about the department's work environment management. The group also serves as a drafting committee for the annual revision of the action plan for work environment management.

# Crisis and Crisis Support Group

Members: safety representative, head of department, administrative manager, personnel administrator, study counsellor, student representative. The Crisis and Crisis Support Group ensures that procedures for crisis support are available at the department and the group provides clear information about these.

# Information initiatives

We provide information about the above and clarify the organisation and division of responsibilities to everyone through:

- LäsIT
- The website
- Planning days, meetings etc. at the divisions
- Work environment signs
- Informational meetings when procedures undergo major revisions
- Staff meetings once a month

#### 2.4 Equal opportunities

# 2.4.1 Operational plan for Equal Opportunities 2022 – Department of Information Technology:

#### 1) Introduction

The plan is composed of two parts. The first part describes day-to-day work with equal opportunities and gender equality at the department, and the second part describes activities

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planned specifically for 2022. The following plan is applicable to all activities within the Department of Information Technology and applies to all staff and students at the department.

# 1.1 Responsibility for Equal Opportunities Efforts at the Department

The Head of Department has overall responsibility for equal opportunities work at the department. The department has an Equal Opportunities Officer, appointed by the Department Board. The Equal Opportunities Officer is responsible for reviewing and evaluating equal opportunities work at the department, planning and executing equal opportunities projects and regularly updating the Operational Plan for Equal Opportunities. The Equal Opportunities Officer is also responsible for supporting students and staff on issues or questions related to equal opportunities within the department.

# 2) Day-to-day Efforts with Equal Opportunities

This section presents the day-to-day efforts with equal opportunities at the department.

# 2.1 Equal Opportunities Officer

An Equal Opportunities Officer is to be appointed. Information about how to contact with this person is provided on the department website. Officers in charge: Head of Department and the Equal Opportunities Officer

# 2.2 The Equal Opportunities Group

The department appoints an Equal Opportunities Group led by the Equal Opportunities Officer. Each division within the department is represented in the group, in addition to representatives of SNIC, UPPMAX, the A Group and students. The members of the Equal Opportunities Group serve as the department's steering committee for equal opportunities. They are also the review panel for equality issues, such as monitoring and evaluating equal opportunities and gender equality efforts, suggesting equality measures, and planning and implementing equal opportunities projects. The group members are also expected to keep their respective divisions/equivalent and head of division/equivalent informed on the work of the Equal Opportunities Group. The Equal Opportunities Group has monthly meetings except during June, July and December. The group's meetings and reporting/documentation are to be in English. Officers in charge: The Equal Opportunities Officer and Head of Department.

#### 2.3 The Management Group (In Swedish: ledningsgruppen)

Members of the department's Management Group who have not yet participated in training on equal opportunities and gender equality are to do so. At least one member of the Management Group who is qualified to deal with equal opportunities and gender equality issues is to have the explicit responsibility for monitoring these issues. Officer in charge: Head of Department

## 2.4 Contact person for gender-related violations

There is a contact person for gender-related violations. This person, as much as possible, is to receive relevant training to be able to fully perform this task. Officer in charge: Head of Department

#### 2.5 Recruitment

Responsible parties for each recruitment process (supervisors, director of undergraduate studies, group leader, etc.) actively and widely search for candidates of the underrepresented gender. These measures are regularly reported so they can be collected and reviewed to allow

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gradual development of recruitment channels and contact networks. Over time, this can contribute to a gender-balanced recruitment processes. Officer in charge: Head of Department

The Head of Department, in collaboration with the Equal Opportunities Officer, investigates ways to track how an active and wide-ranging search for candidates of the underrepresented gender has been carried out, based on feedback from those responsible for the recruitment. Officer in charge: Head of Department

A follow-up analysis of gender representation in positions at the department is conducted using the gender equality indicators. The analysis looks at the proportion of women and men in the positions mentioned in the appendix of this equal opportunities plan. The follow-up should be done every fifth year starting the year 2016. Corrective measures will be taken if improvement is not made. By improvement is meant a visible change towards a gender balance within the interval 40–60%. Officer in charge: Head of Department in consultation with the Equal Opportunities Officer

#### 2.6 Salaries

Differences in pay both within and between comparable groups of employees will be investigated using the salary statistics to determine whether they can be explained on the basis of gender, or if there are other explanations. Specifically, salary differences between administrative and technical staff and between lecturers and research assistants will be analysed. If any differences are found to be based on gender, action will be taken to address these. Officer in charge: Head of Department in consultation with the Equal Opportunities Officer

#### 2.7 Information

Provide general information on equal opportunities efforts at the department, available resources, etc. Officer in charge: Equal Opportunities Officer

Information on the work of the Equal Opportunities Group is provided regularly at division meetings and in LäsIT. Officer in charge: The Equal Opportunities Officer

An annual report summarises the work of the Equal Opportunities Group. Officer in charge: The Equal Opportunities Officer

Meeting minutes of the Equal Opportunities Group are published on the Staff Portal. Officers in charge: The Equal Opportunities Group

2.8 Appointment of groups with important strategic or decision-making functions Every group appointed to discuss or decide on issues affecting a larger number of employees is to include representation by both genders. This includes the Department Board, the Work Environment

Group, the Emergency Management Group, the Equal Opportunities Group, the Nomination Group and the Programme-Responsible Professors Group (Swedish: PAP-gruppen). Officer in charge: Head of Department

A follow-up analysis of appointments at the department is conducted by collecting and documenting data on the gendered composition of investigative and decision-making bodies. The follow-up should be done every fifth year starting in 2016. Corrective measures will be

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implemented if progress is not made. Officer in charge: Head of Department in consultation with the Equal Opportunities Officer

#### 2.9 Research

The department strives to increase the percentage of senior women in research and improve visibility for female researchers (both within and outside the department). This includes women being represented to a high degree in any group of strategic nature – such as groups formed for referral reports, grant applications, etc. Officer in charge: Head of Research

#### 2.10 Doctoral education

The department strives to reduce gender differences in representation of doctoral students. Officers in charge: Head of Department

The gender balance of examination committees and faculty examiners for doctoral dissertations are regularly analysed per research subject. Corrective measures are implemented in cases of a gross imbalance over a 36-month period. The aim should be to have an equal gender balance when assigning faculty examiners for defences of doctoral dissertations. In cases where a woman is not selected, a written report is submitted by the Doctoral Programme Directors Group (FUAP) and sent to the Head of Department. This report should not refer to a lack of candidates as a standard explanation. Instead, it should show that considerable efforts have been made and describe why these efforts failed. Note that even though the department does not formally appoint faculty examiners or examination committees, it is in our interest to evaluate and influence their gender balance. Officer in charge: Head of Department in collaboration with FUAPs.

#### 2.11 Bachelor and master's education

Gender coaching and training in gender-sensitive teaching methods are offered to all teachers at the department. Officer in charge: Head of Department

#### 2.12 Equal opportunities plan

The Equal Opportunities Plan is evaluated and revised annually. The plan is provided in both Swedish and English. Should disputes arise over how to interpret the different language versions, the Swedish version takes precedence. Officer in charge: The equal opportunities officer

# 2.13 Funding for measures to promote equal opportunities

The department has set aside funds for use with activities (proposed by employees at the department at application time) deemed positive for equal opportunities at the department. Calls for grant applications are made four times a year. The applications are compiled and ranked by the Equal Opportunities Group, after which the Head of Department makes the decision. The group may also propose initiatives that could be funded from this fund. A summary of applicants for funds and awarded grants are compiled and published on LäsIT and in other places at the end of each year. Officer in charge: Head of Department in consultation with the Equal Opportunities Officer

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# 3) Action plan 2022

- 1) Enhance the capacity of the equal opportunities group to serve as change agents WHAT: This action is intended to enhance the capacity of the group to serve as change agents at the department and to learn about equal opportunities. HOW:
- (1) Plan active measures on preventing harassment:
  - (1.1) Share the produced video on harassment in each division;
  - (1.2) Create page on the department's website that summarises the process of report harassment and links to a video;
  - (1.3) Add information on posters and screens;
  - (1.4) Input to Head of Department: Include information on harassment at staff meetings;
  - (1.5) Discuss with the Head of Education about organising a training day for TAs on discrimination and harassment, and ask Martin Holmberg to organise a seminar on this;
  - (1.6) Input to Head of Department: clarify the process when action needs to be taken following a report of harassment;
- (2) Plans on how to use equal opportunity funding: Explore options for allocating funding in a different way from the four existing calls for projects; write a new proposal to the Department Board for projects run by the equal opportunities group;
- (3) Consider whether we want to write a proposal for a department-wide project on equal opportunities in collaboration with researchers from the Centre for Gender Research;
- (4) Organise equal opportunity fikas and discuss speakers;
- (5) Organise annual retreat for the Equal Opportunities Group

WHEN: (1.1), (1.2), (1.3), (1.4), (1.5) and (1.6) discussed at the February meeting; (2) and (3) discussed at the May meeting; (4) discussed throughout the year; (5) discussed at the May meeting.

COORDINATOR: (1.1) Ginevra and all division representatives; (1.2) Ginevra in collaboration with Victor Kuismin; (1.3) Ginevra in collaboration with Victor Kuismin; (1.4) Ginevra; (1.5) Ginevra; (1.6) Ginevra; (2) Ginevra and Anna-Lena; (3) Ginevra, all; (4) Ginevra, all; (5) Ginevra and Anna-Lena

2) Support gender mainstreaming efforts at the department

WHAT: The goal is to raise organisational awareness of gender issues at the IT Department. HOW:

- (2) Increase representation of women at different career stages:
  - (2.1) Identify research areas well represented in terms of gender around the world and explore options for announcing a guest professor in these areas, including potential funding for this;
  - (2.2) Follow up on instructions for search committees provided to the Head of Department; if approved by the Management Group, consider revising instructions to include the requirement for the search group report to describe the gender balance in the field and discuss gender aspects;
  - (2.3) Follow up on checklist for how to write job advertisements from an equal opportunities perspective and provide for use at the department

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- (3) Support staff on parental leave:
  - (2.1) Draft proposal to set up a scheme to support permanent staff (association senior lecturers, senior lecturers, professors) returning from parental leave based on TekNat's previous call, e.g., to reduce teaching load, and make budget plan;
  - (2.2) Write new call to support funding of caregiver travel for conference attendance of staff on parental leave;
  - (2.3) Explore the option of making parking spaces for disabled drivers available to pregnant women on a temporary basis;
  - (2.4) Discuss whether there needs to be a follow-up of the gender mainstreaming project on gender indicators at the department regarding allocation of research resources (Ginevra, all)

WHEN: (1.1), (1.2), (1.3) and (2.4) discussed at the January meeting; (2.1), (2.2) and (2.3) discussed at the March meeting.

COORDINATOR: (1.1) David; (1.2) Ginevra, all; (1.3) Ginevra, all; (2.1) Ginevra and Anna-Lena; (2.2) Ginevra; (2.3) Anna-Lena; (2.4) Ginevra, all

3) Diversity-aware education that creates a better learning environment for everyone WHAT: There are three objectives: apply a diversity perspective when supporting students, provide diversity-awareness training to teaching faculty and support changes in the introductory courses for teachers.

HOW: (1) Input to Head of Education: make sure to recommend inclusion of lecture on discrimination and diversity in introductory courses of our BSc and MSc programmes. (2) Investigate if we can involve doctoral students in organising public events targeting secondary schools.

WHEN: (1) and (2) discussed at the April meeting

COORDINATOR: (1) Ginevra; (2) all, after input from Helena

4) Best doctoral student education for everyone

WHAT: The goal is doctoral students and supervisors to have an awareness of equal opportunity issues and to create an even playing field offering the same opportunities to all doctoral students at the IT Department.

HOW: (1) Explore options for creating a course on equal opportunities based on equal opportunities seminars.

WHEN: (1) discussed at the January meeting

COORDINATOR: (1) David

5) Career development from an equal opportunities perspective

WHAT: Support early career faculty from an equal opportunity perspective.

HOW: (1) Provide input to the PAP group on how to support career development from an equal opportunities perspective.

WHEN: (1) discussed at the November meeting.

COORDINATOR: (1) Ginevra, all

6) Support awareness of equal opportunities in research

WHAT: Support integration of the equal opportunities perspective in research activities at the IT Department

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HOW: (1) Invite Tommy Schönberg from Vinnova to speak at a seminar; (2) New call for funding to support how to formulate and work with aspects related to equal opportunities in research project proposals; (3) Explore options for organising a strategy day on equal opportunities and invite researchers from gender research.

WHEN: (1) and (2) discussed at the August meeting; (3) discussed at the January meeting COORDINATOR: (1) Thiemo; (2) Thiemo, Ginevra; (3) Ginevra

# 3. Ensuring access to skills at the department

# 3.1 Plan for ensuring access to skills

## 3.1.1 Mapping of:

#### a) Primary strengths

The Department of Information Technology is one of the biggest departments at Uppsala University, which enables breadth and depth in both research and education. Since we can recruit teachers and researchers in many research areas, we can offer a diverse range of bachelor courses and programmes. Not only can our students (many with non-Swedish backgrounds) combine courses that match their interests, their education fulfils the expectations of a relevant and attractive education on the labour market. We are successful in obtaining external research funding, we are well-positioned among the international competition and we have many well-regarded collaborations with the private sector.

#### b) Primary challenges

The department's biggest challenges when it comes to access to skills are: 1. The rapid growth in teaching obligations has not been matched by the same growth in research funding, and 2. Difficulty achieving diversity among new hires, especially in recruiting women to positions other than in administrative roles.

- It has become increasingly difficult to recruit new teachers over time, as the gap
  between teaching obligations and research funding has increased. Between 2016 and
  2020, teaching obligations increased by 34%. Expressed as full-time equivalent
  students (FTE) per calendar year, teaching obligations increased from 1,022 FTEs to
  1,350 FTEs. In that same period, our faculty grants for research increased by 19%,
  from SEK 81 million to SEK 96 million. Consequently, employment conditions for
  new teachers have worsened.
- 2. The department has had a skewed gender distribution<sup>1</sup> for a long time. To address this, we are conducting systematic and ambitious equal opportunity initiatives, led by our Equal Opportunities Group. Despite this awareness and our active measures, recruiting a more diverse staff is one of our biggest challenges. We have therefore initiated a review and revision of our recruitment processes.

<sup>1</sup> For example, 75% of our professors, 88% of our senior lecturers and 100% of our associate senior lecturers are men.

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# 3.1.2 Analysis of:

# a) Areas for improvement

Society's interest in our education and research fields means we can offer our prospective teachers numerous opportunities for attractive positions. We offer opportunities to engage in relevant and current research and education in a professional, academic environment. One highly relevant focus of our work is cyber security. We have begun wide-ranging and in-depth work with excellent contacts with other parts of the University and externally, and we have significant disciplinary visibility in the most important international arenas.

Joint funds are also used to support division-wide work in areas judged potentially important moving forward, either in an arena format or as initiatives in specific areas. The arena format is flexible and new arenas are created as soon as a need arises. Inactive arenas are discontinued. A joint initiative on "social robotics, with a focus on trustworthy human-robot interaction" is one of the latest specific initiatives in the field.

We continue to have significant participation in and responsibility for interfaculty, interdisciplinary activities, such as AI4Research, SciLifeLab, Uppmax, MTSI, eSSENCE, CIM, etc. With financial support from SciLifeLab, the department has recruited a SciLifeLab fellow in "Scientific Computing with Specialization in Data-Driven Life Science". This is in line with the recently announced KAW initiative in Data Driven Life Science, a SEK 3 billion, 12-year research programme in Life Science that interfaces with mathematics, data and AI, with a connection to KAW's initiatives in autonomous systems, software and AI and quantum technology via the WASP and WACQT programmes.

#### 3.1.3 Strategy for long-term access to skills

# a) Career paths and professional development

All department staff are offered employee dialogues, which includes discussions on professional development. For doctoral students, special emphasis is placed on following the individual study plan, and deviations are analysed and explained. We offer internal support for becoming a distinguished university teacher and obtaining the necessary skills to become a docent and be promoted to professor.

For our associate senior lecturers, we have a department-specific programme, where they can meet others and discuss challenges and opportunities. As part of the programme, career paths and their various steps are highlighted and clarified. The programme has been very popular.

For administrative staff, professional development initiatives focus on specialist areas. Course administrators participate in networks and workshops in the field, and our finance officers and personnel administrators follow the training initiatives offered internally at the University. Courses are externally procured, if needed. For example, everyone in the administrative group had the opportunity to take an Excel course in spring 2021.

#### b) Important priorities

Our long-term priorities for ensuring access to skills primarily involve offering attractive positions and terms for teachers and researchers in the areas we are developing, as noted under section 2a above and in other places.

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Within administrative support, we conduct regular follow-ups to identify necessary support, both for core activities and for department management. New roles have been created to satisfy new needs, most recently the role of administrative coordinator, which primarily supports department management and coordinates the department's overarching administrative processes and procedures.

#### 3.1.4 Planned measures

#### a) Action plan based on responses in points 1–3

The department has previously worked to ensure access to skills at the department level (including joint procedures for search committees and systematic gender equality initiatives) and partly at the division/unit level (including planning for staff attrition through retirement). We now intend to further systematise this work.

- We are currently implementing a documented and well supported recruitment process for doctoral students, in part to ensure more diversity in recruitment but also to ensure the quality of the process.
- The Equal Opportunities Group has explored improving instructions to the search committee, so that we can improve the likelihood of recruiting more women to teaching positions. Their report will be presented to the board, and suitable revisions will be proposed.
- We are considering the potential of taking bigger financial risks with recruitments (using some external funding to support recruiting) and hiring more adjuncts that will be expected to take on a larger share of teaching as part of their position.

#### b) Possible need for support centrally from the University

The Department of Information Technology underwent an internal audit of plans for ensuring access to skills and, in the process, we received valuable comments and suggestions for improving this work. We have received good support centrally from the University in the form of templates and support materials. Previously, we also received support from the HR Division during one of the department's strategy days focused on recruiting. The HR Division contributed with a overview of skills-based hiring. We feel that support is available if needed.

Currently, we would especially like support in achieving a better balance between research funding and teaching obligations.

# 3.2 Upcoming teacher recruitments

# 3.2.1 Division of Scientific Computing (TDB)

Four teachers (Eckerdal, Kreiss, Neytcheva, Pålsson) will retire within 3 to 5 years, and new teachers will need to be recruited to replaced them.

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# 3.2.2 Division of Computing Science (TDB)

In 2022, the division is planning to hire:

- A professor of computing science specialised in data management
- A lecturer/professor of computing science specialised in software engineering
- An associate senior lecturer of computing science specialised in artificial intelligence

Longer-term teaching recruitments are impossible to predict. We believe in continued expansion, and it is likely that there will be 1-2 more.

# 3.2.3 Division of Computer Systems (DoCS)

Several recruitments are underway at the Division of Computer Systems that will lead to new hires in 2022:

- Associate senior lecturer in computing education research: a senior lecturer will begin in late autumn 2021 and will move, along with the research programme in computing education research, to division Vi2 in early 2022.
- Associate senior lecturer in computer systems with a focus on embedded systems: one or two senior lecturers are expected to begin in 2022.
- Associate senior lecturer in computer networks with a focus on machine learning in network-based systems: one or two senior lecturers are expected to begin in 2022.

For 2022, there are plans or ongoing discussions for additional recruitments:

- Senior lecturer or associate senior lecturer in formal methods and/or testing: a search committee has been formed and will begin its work in autumn 2021.
- Senior lecturer or associate senior lecturer in cyber security: discussions are underway.
- Guest professor in cyber security.

In the long run, more recruitments will be needed, possibly at professor level, to compensate for attrition due to retirements in the next few years. The design of these recruitment processes is not yet clear, and the division is planning strategy days and a conference in 2022 to work on this renewal process.

In addition to the positions noted, short-term adjunct positions intended to cover more temporary teaching needs will also likely be needed.

# 3.2.4 Division of Systems and Control (Syscon)

Systems and Control is currently expanding, as Machine Learning and Artificial Intelligence, in particular, have grown in high demand, with the majority of courses growing. In 2022, at least one lecturer or professor will be hired through an ongoing recruitment process, and thereafter we expect 1–2 permanent employees per year to cover attrition due to retirements and increased demand for our courses. We expect this guideline to apply for at least 3 years.

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# 3.2.5 Division of Visual Information and Interaction (Vi2)

Planned teacher recruitments at Vi2 are:

- Associate senior lecturer in social robotics. Preliminary start date: 2 January 2022
- Associate senior lecturer in human computer interaction With the search committee. Start date planned for 2022.

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# Appendix A – account coding of joint IT for 2018, 2019, 2020, 2021, 2022

Function		Allocation 2019	Allocation 2020	Allocation 2021	Allocation 2022
	1-3-3	Man	agement		
Head of	75%	75%	75%	75%	75%
Department					
Deputy Head	0%	0%	10%	10%	15%
of					
Department					
Div. dir.	40%	45%	45%	45%	45%
CSD					
Div. dir.	50%	50%	50%	50%	50%
DoCS					
Div. dir.	30%	30%	40%	40%	45%
Syscon					
Div. dir. Vi2					
(incl.	450/	<b>500</b> /	<b>500</b> /	550/ (650/)	C50/
UpCerg)	45%	50%	50%	55% (65%)	
Div. dir. TDB	50%	50%	50%	50%	50%
		Edu	ucation		
Head of					
education	20%	30%	40%	30%	30%
Deputy Head					
of Education				10%	10%
	1	Re	search	l	l
Head of					
Research	10%	20%	20%	20%	20%
	l		al studies		
Director of					
studies,					
doctoral					
studies	5%	10%	10%	15%	10%
		Collaboratio	on and outreach		
Collaboration					
coordinator	10%	0%	10%	15%	15%
	ı	Comm	unication	I	I
Web group	4*10%	2*5%	7%+2*5%	5%	5%
0 1	l	Work e	nvironment	<u> </u>	L
Mentors	Coordination	Coordination	5%	5%	5%
	+ 4 seniors + 5	+ 3 seniors +	outreach	outreach	outreach
	doctoral	4-5	+ 2 seniors + 4	+ 2 seniors + 4	+ 2 seniors + 4
	students		doctoral	doctoral	doctoral
	at 5%	at	students	students	students
		5%	at 5%	at 5%	at 5%

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Equal opportunities					
Equal					
opportunities					
officer	10%	10%	10%	10%	10%

# Allocation within bachelor and master's education

Function	Allocation 2018	Allocation 2019	Allocation 2020	Allocation 2021	Allocation 2022			
Management bachelor and master's education								
Directors of studies	3*48% + 2*24%	3*48% + 2*24%	4*50%	4*50%+25%	3*50%+2*25%			
Degree project coordinator	25	25	25	0 (included for one of the directors of studies)	25 (until new adjunct begins)			
Subject coordinator	20%				20%			
		wiaster's progra	mme responsibili	ity				
DVM	14%	15%	18%	17%	17%			
- SK	-	-	2%	2%	2%			
- CoPa	2%	2%	2%	2%	2%			
TBM	8%	13%	15%	15%	15%			
ISM	9%	15%	15%	15%	15%			
DSM	-	-	15%	15%	15%			
IMM	-	-	15%	15%	15%			