



2. Education & Research: we continue to deliver top quality across the board

Virtually all of the UvA's areas of research rank highly on the international stage. In a rapidly changing world, however, what is good today may not be good enough tomorrow. That's why we will continue to invest in our strength: fundamental research in our disciplines. From there we will stimulate innovation in research and education through additional funding. Finally, we will put digitalisation at the top of the agenda.

If we want to continue to offer our broad range of research and education programmes at this high level a number of strategic choices must be made.

In the case of research, we will focus the choices we make in existing programming and investments. We will do this on the basis of two analyses: what makes the UvA's research stand out and which social issues inspire us? In addition, we will make our research more innovative by collaborating at the interfaces between disciplines. We will provide additional funding for this through four Themes. Each discipline can take inspiration from the Themes and gain enrichment from the insights and methods of other fields. Our strengths in the field of artificial intelligence (AI), data science and complexity will be particularly useful in this context. This will result in a combination of depth and breadth which we will use to exploit the competitive advantage of the UvA, build scientific knowledge around social issues and attract new talent.

The excellence achieved in research must be reflected in our education. This will be a key criterion when allocating the additional funding for the Themes. Our education is research-intensive: when there is innovation in the disciplines, this must be reflected in the content of the degree programmes. Innovations in the field of data science are relevant to every degree programme. We want every UvA student to have (at least) a basic understanding of this field.

In all of this, we will use digitalisation in a more effective way. In the case of education, the corona crisis has accelerated the use of online forms of learning but it has also demonstrated just how indispensable face-to-face learning processes are. We will put what we had already planned into practice sooner and more thoroughly, i.e. we will enhance our education further through a smart combination of online and face-to-face learning. And we will go a step further, exploring alternatives to the prevailing system of lectures and tutorials, with a view to making each contact between lecturers and students more intense and more effective.

In a nutshell, what we must do over the forthcoming years is:

1. focusing more strategically in our research programming
2. encouraging closer collaboration between disciplines
3. ensuring that our education reflects our research and societal questions
4. making effective use of digitalisation to renew our research and education



2.1 Focusing more strategically in research programming

The deployment of available research funding is dictated by the desire to be just as good tomorrow as we are today, i.e. to continue to lead the way internationally across a broad spectrum of disciplines. In the 2019 Strategic Framework for Research it was agreed that more careful choices would be made regarding the deployment of this funding. Two analyses are important here. The first is: where can the UvA's research be outstanding in the long term? The second is: how can we respond to social challenges for which indirect government funding (through the NWO and the EU) and contract research funding (from other sources, public and private, national and international) are available? Our research strategy will therefore be based on a carefully developed analysis of the UvA's strengths in all disciplines and subdisciplines. This will include both our own analysis of the situation and the view from outside of the UvA, and will indicate the intellectual footprint and the competitive advantage of all our disciplines.

Our point of departure, therefore, will be our existing strengths. From there we will generate innovation in both the course content and methods of research. As stated earlier, one source of innovation is interdisciplinary collaboration. Section 2.2 explores this in more detail.

The Strategic Research Framework specifies a number of other prerequisites for maintaining and strengthening our internationally leading research position. These are discussed elsewhere in this Strategic Plan:

- collaboration in teams (see Chapter 7)
- collaboration in (European) consortia (Chapter 4)
- strategic collaboration with civic partners on a reciprocal basis (Chapter 4)
- good research facilities and a good digital infrastructure (Chapter 7)
- open science (collaboration, transparency, reproducibility and general accessibility of academic output, see Chapter 5)

It goes without saying that we strive for the highest degree of scientific integrity and independence in our work, based on the recommendations of the Academic Integrity Working Group from 2017, which remain relevant in the 2020s. As we do in our degree programmes, at both Bachelor's and Master's and PhD level.

Things to do

- Make explicit the strategic position, opportunities and choices of all research institutes for the years ahead (based on intellectual footprint, competitive advantage and social significance and inspiration).
- Maintain the open internal dialogue around the independence and integrity of academic research and include it in education.



2.2 Encouraging closer collaboration between disciplines

As well as more strategic choices in our research programming, we will encourage collaboration between disciplines. We will use the financial room for manoeuvre in our budget (the overall university budget and the budget of the individual faculties) for this purpose.

The additional funds will be used to invite academics to formulate new and at times unexpected research questions at the interface between disciplines and faculties, and to incorporate these into our teaching. To this end, we have chosen four societal Themes, all of which play to the UvA's strengths:

- *responsible digital transformations*
technology and ethics of regulation, algorithms, systems and platforms; their impact on trust, dependence and equality in society
- *healthy future*
mental and physical health in relation to cultural factors, behaviour, greater participation in society and the creation of equal opportunities
- *resilient and fair society*
participation, inclusion, inequality, safety and resilience of society, governance and democracy in relation to cultural and technological innovations
- *sustainable prosperity*
sustainable, climate-proof progress through a reduction in ecological footprint, behavioural change and innovations in materials and resources

There are, of course, issues that span multiple Themes. The corona pandemic, for example, raises issues that cut across all of these Themes (e.g. the relationship between health, freedom and security or the use of digital means to bring the pandemic under control). Concepts such as artificial intelligence, behaviour, inequality, conflict and public domain provide common perspectives on the Themes, which align well with existing UvA research.

By boosting innovation through these Themes, we aim to achieve the following additional benefits:

- the research collaboration must attract other income, which will ideally lead to long-term partnerships with internal and external researchers and with interested businesses and philanthropists. The additional funding will come from the EU, the NWO, the Growth Fund or the region, for example;
- the innovation must filter through into our degree programmes (both undergraduate and postgraduate), enabling us to attract new students with programmes that relate to the new research questions. That way, we continue to present the UvA as a leading research-intensive university;
- the research collaboration will enable us to attract talent from both the Netherlands and abroad through an inter-faculty approach.

The financial incentive will be in addition to the existing provision for Research Priority Areas (RPAs). In principle, a quarter of the additional funds will be available for each of the four Themes. The funds will be used to support the establishment of project-based research areas over a period of five to ten years. Thereafter, the research areas will fund themselves (from research council and contract funding and through the education and research parameters of the internal allocation model). The rector will liaise with the deans of the faculties involved over how and to which principal researchers and educators the additional funding will be entrusted.

Things to do

- Invest additional funds in a fundamental innovation of research and education through inter-faculty collaborations.
- Attract new, young and mid-career talent to the UvA and delegate responsibility for recruitment to inter-faculty appointments committees.
- Use the fellowship programme of the UvA Institute for Advanced Study (IAS) to give researchers the time and opportunity to master another discipline, through sabbaticals, for example.



2.3 Reviewing the connection of our education to research and societal questions

In conjunction with research, we will review our degree programmes and update them where necessary. Ensuring that our degree programmes tie in with the Themes described in Section 2.2 is important in this context, but it is not the only factor to consider.

We want to ensure that our portfolio remains futureproof and distinctive and that the breadth that it offers is affordable. In practice, it has been easier to add programmes and modules than to discontinue them. By the end of 2021, every faculty (college/school) will analyse the degree programmes that it offers, the diversity of its student population and its ‘market position’. This portfolio analysis will indicate how the existing offer aligns with our research priorities and our values, and with the requirements of students and society. It is clear, for example, that demand for interdisciplinary programmes is increasing, as is the demand for mainstreaming (i.e., converting electives into permanent components), e.g. modules on sustainability, social justice, cross-cultural perspectives or artificial intelligence. The range of minors that we offer in particular must demonstrate the width of UvA’s disciplines. We want to make our minors more accessible and attractive to students from both within the UvA and beyond (including international students). We will take this into account when timetabling. We are looking into the possibility of offering (parts of) our degree programmes internationally through ‘unbundling’. This is the trend for regrouping educational components and re-delivering them or delivering them in combination with other international educators by digital means. Courses and modules which are closely related to our research lend themselves particularly well to this practice.

We will ensure that our best academics lecture on our Bachelor’s programmes too, because, after all, our Bachelor’s programmes have an academic, research-intensive focus. And, as far as the format of our degree programmes is concerned, we will strive for a ‘human dimension’; within the constraints of available resources of course (Chapter 3 explores this in more detail).

In the Master’s phase, we want to align our degree programmes more closely with our research priorities (including the RPAs). The innovation incentive described in Section 2.2 contributes to this. The alignment of the master programmes’ admission criteria with the end terms of interdisciplinary bachelors also requires attention. Moreover, according to some faculties, in some cases a one-year Master’s is too short to achieve the required specialisation. We are exploring possibilities of extension with the faculties.

Things to do

- Explain the strategic choices behind each degree programme: what is the purpose and the target group; what are the learning objectives and the range of honours on offer; how inclusive and diverse is the programme; how does it link up with secondary education, the labour market and our research; what is the language of instruction; how does it stand in terms of accessibility, study programme feasibility, teaching methods employed and digitalisation, workload and compliance with the 2018 Institutional Quality Assurance Audit?
- Review the range of minors on offer (aspects to consider: extent of freedom of choice, international profile). Experiment with extending the duration of a number of one-year Master’s programmes.



2.4 Renewing research and education through advanced digitalisation

We have seen during the corona crisis the extent to which (and, indeed, how much more than five or ten years ago) a wide range of processes can take place digitally and remotely. And, since the previous Strategic Plan, the technical capabilities of computers and information technology have increased enormously. At the UvA we generate knowledge that is relevant to the digitalisation of many areas of society. We do this, for example, in conjunction with QuSoft, the research centre that focuses specifically on quantum software (a joint initiative between the UvA and VU Amsterdam) and with ASML in the ARCnl project. We have made new and scientific questions – raised by the technical possibilities – into a key area of focus. In 2022, for example, we will open the ICAI building on Amsterdam Science Park, bringing academia, education and business applications in the field of AI under one roof. We have already appointed four university professors on the interfaces between AI and a range of other disciplines. But we won't stop there. Data and methods which can enable radical innovations in research are available for all disciplines. We are setting up a data science function to help researchers acquire skills for data-based research, even if they have not grown up with it.

We also recognise the huge impact that digitalisation has on freedom and privacy, and how important it is to take care in this regard. The students we are currently educating will get nowhere without a (basic) knowledge and understanding of digital technologies, and must be familiar with the use of data, images and algorithms and the ethical issues that this entails.

As far as the way in which we deliver our education is concerned, the effectiveness of learning is at the top of the digitalisation agenda. While the 'Blend IT & Share IT' report from 2015 invited UvA lecturers to experiment with the concept of 'flipping the classroom', now, online forms of learning are an integral part of the learning process (globally). The new Teaching & Learning Centres play a key role in the development of these forms of learning for the UvA. Rather than simply moving existing learning online, we want to genuinely make use of digitalisation to provide different, innovative forms of learning, including the opportunities that this brings in terms of accessibility, internationalisation and distance learning. We will consider carefully what constitutes the optimum mix of online and face-to-face learning. Exploring alternatives to the prevailing system of lectures and tutorials opens up opportunities for organising our degree programmes on a smaller scale and increasing student engagement. Chapter 3 explores this in more detail.

Things to do

- Set up a data science function that helps researchers conduct data-based research securely.
- Include relevant learning outcomes regarding digital methods or data science in every Bachelor's degree programme; make one or more minors in data science widely available.
- Make more use of ICT resources for active learning (knowledge clips, tools for feedback and independent study), for digital forms of assessment, for eliminating deficiencies and disadvantages and for new forms of learning (both online and face-to-face).