

NTNU 2020 - Internationally Outstanding

NTNU is a university with a broad academic scope that has its main focus on technology and the natural sciences. The university has about 20 000 students and 4800 staff. NTNU has been given the national responsibility for graduate engineering education in Norway and offers an extensive range of subjects in the natural sciences, technology, the humanities, aesthetic studies, health studies, the social sciences, and financial and economic disciplines. NTNU offers education in the professions: technology, medicine, psychology, architecture, fine art, music, pictorial art, architecture, and teacher education.

NTNU's research has an international focus and can be characterized by being at the leading edge in specific areas of technology, having a broad disciplinary scope and an interdisciplinary approach. NTNU has selected six thematic interdisciplinary strategic areas that address the key societal challenges where it is especially qualified to make a contribution:

- Energy and petroleum, resources and environment
- Globalization
- Information and communication technology
- Medical technology
- Marine and maritime research
- Materials technology

NTNU has extensive strategic cooperation with SINTEF.

Our role

NTNU's main tasks are to

- **develop and manage knowledge** by maintaining, creating and disseminating knowledge in interaction with society
- **develop our graduates' expertise** by providing high quality research-based education that has relevance for both the individual and the society
- **renew society** and contribute to value creation and welfare development – regionally, nationally and globally

Our value statement

NTNU's value statement is expressed in its strategic plan "Creative, constructive and critical" from 2001.

NTNU is based on the fundamental democratic idea of the university as a critical and independent institution. All NTNU's activities are to be characterized by openness and high ethical standards.

NTNU is to have a working and learning environment that is compatible with creative interaction, constructive problem-solving and critical assessment. NTNU is to encourage contributions from its students and staff, and promote tolerance irrespective of sex, faith or culture.

NTNU is to search for innovative and sustainable solutions to domestic and global challenges.

Our vision: “NTNU Internationally Outstanding 2020”

Research and higher education are global activities that can be characterized by increased competition for human and material resources. In such a situation, NTNU has to be continuously engaged in measures to enhance the quality of all activities. NTNU is to have the ambition of being one of the outstanding universities in Europe.

Our vision is that by 2020 NTNU is to be internationally recognized as an outstanding university. Generally accepted criteria, evaluations and assessments are to document that

- NTNU is among the international leaders in selected strong point areas
- NTNU is among the ten leading technological and scientific universities in Europe
- NTNU is among the top 1 % of comprehensive universities in the world

Our challenges

For Norway it is vital to have strong, internationally focused education and research environments. Education and research are competitive factors in any country that is dependent on producing knowledge-intensive products, processes and services. The international success of Norway is dependent on having quality universities with high academic standing. NTNU must therefore

- **be characterized by academic and scientific quality and relevance** by developing staff competencies and creating the infrastructure and conditions needed to develop leading research groups that meet the innovative requirements of society.
- **recruit outstanding students and researchers** by having an attractive range of academic programmes and creating competitive working conditions and learning environment
- **recruit more women to academic positions**, particularly in natural science and technology
- **increase our visibility** by dissemination and marketing of NTNU's strong points nationally and internationally
- **be a dynamic organization** by working towards common priorities and having effective processes and systems to support our core activities
- **maintain and develop the university as a distinct democratic institution** by enabling students and staff to have freedom of expression and encourage active participation
- **generate sufficient investment and operational income** by making our expertise visible and engage in activities together with the authorities, funding agencies and industry – regionally, nationally and internationally

Strategic objectives

Research

Research at NTNU is to have recognized international standing in all disciplines. Selected strong point areas are to be at the international leading edge. Research at NTNU is to be characterized by relevance, top-level expertise and interdisciplinary cooperation. The quality of our research is to be further enhanced by actively seeking cooperation and alliances with prominent scientific groups nationally and internationally.

Dimensions	Objectives 2010	Objectives 2020
Publications	25 % of the national publication points (index 2005) 2.4 publication points per tenured faculty 25 % of all publications are at level 2	Citation and publication output of tenured staff is to be comparable with the 20 best universities in Europe
PhDs	350 PhD degrees awarded	The total production of graduates per member of the tenured staff is to be above the European average; satisfactory level of international applicants to our PhD programmes
External funding	35 % increase in externally funded research 100 % increase in EU- funded research (index 2005)	International funding for projects in all selected strategic and strong point areas
Interdisciplinary measures	50 % more publications with authors from more than one faculty (index 2005) 15 % of PhD candidates have supervisors from at least two faculties	Interdisciplinary cooperation that is comparable with the 20 best universities in Europe
Strategies	<ul style="list-style-type: none"> - Establish clear lines of academic management and priorities, and allocate more continuous time for research - Exploit and develop our laboratories and the alliances with SINTEF and St. Olavs University Hospital - Increase the mobility of researchers and seek cooperation with prominent research groups - Stimulate increased interdisciplinary cooperation in research - Recruit outstanding post docs and doctoral candidates and strengthen measures to follow them up 	

Education

NTNU's programmes of study and continuing and further education are to be relevant for society and there is to be a demand for our graduates in working life. The education is to be conducted in a learning environment with high academic and pedagogical quality that is characterized by cultural diversity. NTNU is to promote interdisciplinary measures and merge theory with practice. NTNU is to have an international focus and be leading in technological and natural science education. Master's and doctoral degrees are to be given priority. Continuing and further education is to be strengthened.

Dimension	Objectives 2010	Objectives 2020
Educational quality	<p>At least 2.5 primary applicants per place on average</p> <p>Average grades for primary applicants at time of entrance increased by 1.2 % compared to 2007 levels</p> <p>Percentage of master's degree graduates compared to acceptance levels from 2 or 5 years ago increased on average by 5 % compared to 2008 levels</p> <p>80 % of students experience a positive learning environment at NTNU</p> <p>80 % of employers are satisfied with the qualifications/expertise of NTNU graduates</p> <p>80 % of graduates are satisfied with their education with respect to job qualifications or other expectations</p>	<p>Europe's most attractive university in selected programmes of study, continuing and further education; competition for all places at NTNU</p> <p>Ranked among Europe's 20 best according to recognized measures</p>
Internationalization	<p>Number of joint student programmes with universities abroad increased by 25 % relative to 2007 levels</p> <p>Number of active agreements for graduate programmes with universities abroad increased by 100 % relative to 2007</p> <p>Number of incoming and outgoing students increased by 5 % in each category relative to 2007</p>	<p>Joint programmes of study/degrees (Master's/PhD) with universities that are ranked among the 20 best in Europe</p>

Strategies

- Strengthen recruitment and network building with other educational institutions, industry and society
- Develop more education given in English especially at Master's and PhD levels and implement measures to market this
- Create an eminent learning environment in close cooperation with student organizations and the Student Welfare Organization
- Coordinate and develop a comprehensive learning environment for quality in university education
- Develop structures that promote interdisciplinary teaching and cooperation in supervision

Dissemination

NTNU is to be the leading university in Norway in terms of dissemination to the general public. It is to have specific responsibility for increasing knowledge about and interest in natural science and technology in society. NTNU's students and staff are to be stimulated to actively participate in the public debate and transfer of knowledge. Dissemination of art and knowledge are to contribute to strengthening NTNU's standing and visibility.

Dimension	Objectives 2010	Objectives 2020
Dissemination to the general public	20 % more publications/activities (index 2005)	Highest level in Norway of publications/ general dissemination activities per member of tenured staff
Media coverage	Daily mention in national press/media	Regular mention in international media
Recognition and standing index	High level of recognition/ good standing among selected target groups	High level of recognition/ good standing among selected target groups internationally
Strategies		
<ul style="list-style-type: none"> - Strengthen support systems for media training and dissemination skills - Develop existing and new channels for dissemination, including international internet portals at NTNU - Use the know-how and collections found at the Museum of Natural History and Archaeology (NTNU) to simulate interest in natural science and technology - Profile NTNU's artistic disciplines in dissemination and international brand building - Active participation in the public debate to influence the agenda for research, education and industrial policy 		

Innovation

NTNU and SINTEF are to be national leaders in contributing to research-based spin-off companies and revitalization of the public and private sectors. In selected areas, NTNU is to be among the international leaders. NTNU's students are to be encouraged to apply their knowledge to innovative commercial activities.

Dimension	Objectives 2010	Objectives 2020
Innovation and commercialization	At least 20 spin-offs formed (companies or licensing agreements)	Among Europe's 10 leading universities in research-driven innovation
R&D contracts with user involvement	50 % increase in the contracted amounts for new R&D projects with user involvement (index 2005)	Among Europe's 10 leading universities measured in R&D projects per member of the tenured staff
Student participation in innovation	10 companies formed; 50 % more student projects in companies (index 2005)	Among Europe's 10 leading universities for student participation in innovation
Strategies		
<ul style="list-style-type: none"> - Introduce duty relief arrangements for staff involved in innovation activities - Integrate entrepreneurship in more programmes of study - Develop a comprehensive and effective support apparatus for innovation, technology transfer and commercialization - Engage more adjunct professors from the public and private sectors 		

Organization and resources

NTNU is to have the physical framework conditions and organizational culture that will help students and staff to develop their competencies and enable NTNU to meet its objectives. NTNU will employ its personnel and economic resources to ensure optimal efficiency. NTNU shall have modern, competitive laboratories and infrastructure, and provide effective administrative services for its students and staff.

Dimension	Objectives 2010	Objectives 2020
Work environment	Work environment surveys: 8 of 10 are satisfied or very satisfied on relevant scales	Ranked among Europe's best based on recognized measures
Faculty gender equality	50 % women newly hired in positions requiring doctoral degrees	Genuine equal opportunities in all disciplines
New faculty recruitment	At least 40 % from other institutions, of which at least 20 % are from institutions abroad	Internationally attractive workplace; satisfactory number of external applicants for all positions
Economic resources and control	20 % increase in NTNU's total resources (index 2005)	Resources per member of the tenured staff are above the European average
	Improved quality of economic prognoses (relative to 2007)	
	Increased average rates for overhead for externally financed projects (relative to 2007)	Increased percentage of 100 % financing for externally financed projects.
Strategies		
<ul style="list-style-type: none"> - Develop a comprehensive personnel policy for NTNU that places weight on the development of skills and competencies and the organizational culture - Motivate staff performance and cooperation by wider use of incentives - Have a recruitment policy that is based on strategic personnel plans, particularly measures to strengthen the career opportunities for female staff - Introduce unitary management and strengthen the interaction between organizational levels - Compile an active policy for campus development and property management that supports the main objectives of NTNU - Implement measures that make NTNU's expertise more visible to the authorities, funding agencies, industry and the community at large; market this expertise to these groups 		