

Rektor

Dato  
21.06.2011Referanse  
2011/474/JIR**Notat**

Til: -Fakultetene

Kopi til: -Forvaltningsutvalgene, Utdanningsutvalget, Studenttinget

Fra: -Prorektor for utdanning og læringskvalitet  
-Studiedirektør

Signatur:

  
**EKSPEDERING AV VEDTAKET I STYRE-SAK 30/2011:****-STUDIEPROGRAMPORTEFØLJE-ENDRINGER 2012/2013 – RUNDE 1 – OG OM  
-PORTEFØLJEUTVIKLINGEN PÅ SIKT**

Styret gjorde 08.06.2011 følgende vedtak i S-sak 30/2011:

1. *Styret ber om at det langsiktige, strategiske arbeidet med utvikling av studieprogramporteføljen i samsvar med NTNUs strategi 2011-2020; Kunnskap for en bedre verden, følges videre opp.*
2. *Styret ber i den forbindelse om at det arbeides videre med de foreløpige forslagene til endringer i studieprogramporteføljen for studieåret 2012/2013 i henhold til vurderingene i Rektors notat av 31.05.2011 med henblikk på framsettelsen av de endelige forslagene overfor Styret høsten 2011."*

Rektors styre-notat (m/ vedleggslenker) av 31.05.2011 tilhørende S-sak 30/2011 følger vedlagt.

Vedlagt følger også revidert versjon av juni 2011 av kravspesifikasjonen for nye studieprogram (vedlagt både i kortversjon og i fullversjon, og denne legges også ut i KVASS).

Ved den endelige forslags- og vedtaksrunden i høstsemesteret skal denne kravspesifikasjonen etterfølges fullt ut, og fristen for innsending av endelige forslag til endringer i studieprogramporteføljen 2012/2013 (runde 2) settes til **10. september 2011** (sendes i ePhorte 2011/474 til JIR).Postadresse  
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All korrespondanse som inngår i saksbehandling skal adresseres til saksbehandleren ved NTNU og ikke direkte til enkeltpersoner. Ved henvendelse vennligst oppgi referanse.

Styret gav i sitt møte 08.06.2011 uttrykk for tilfredshet med at utviklingen av studieprogramporteføljen blir vurdert i forhold til NTNUs strategi 2011-2020; Kunnskap for en bedre verden (vedtatt av Styret 30.03.2011; S-sak 21/2011). Det ble framholdt at en ser positivt på tendensene til økt konsentrasjon innen porteføljeutviklingen, men at en gjerne hadde sett dette enda tydeligere.

Rektor ser fram til framleggene av de endelige forslagene høsten 2011 med henblikk på endringer i studieprogramporteføljen for studieåret 2012/2013 samt fakultetenes videre utvikling og tilpassing av sine respektive fakultetsstrategier til NTNU-strategien.



Studiedirektøren  
v/Jon Inge Resell

Saksbehandler  
helgrav  
Telefon

Vår dato:  
05.09.2011

Vår ref.:  
2011/474

Deres dato:  
2011/474

Deres ref.:

**EKSPEDERING AV VEDTAK I STYRE-SAK 30/2011:**

- Studieprogramportefølge-endringer 2012/2013 - runde 2 og om
- Portefølgeutviklingen på sikt.

Det er ingen endringer i studieprogramporteføljen fra AB-fakultetet for studieåret 2012/13 i forhold til vår ekspedisjon av 27.04.2011, e- phorte sak 2011/474.

Arbeidet med utredning av mulighetene for å opprette et 5-årig masterprogram i Fysisk planlegging er forsinket, og arbeides forventes å være ferdig i løpet av høstsemesteret 2011.

AB - fakultetet fikk sammen med sine samarbeidspartnere innvilget 1 million danske kroner høsten 2010 fra Nordisk Ministerråd via SIU (Senter for internasjonalisering av utdanningen) til etablering av Nordic Master Programme in Sustainable Urban Transitions. AB ønsker å bidra til bedre dekning av behovet for kompetanse innenfor fysisk planlegging.

Studieprogrammet er innenfor NTNUs hovedprofil og har en klar profesjonsorientering.

**Nytt studieprogram innen Sustainable Urban Transitions.**

**1) Strategisamsvar**

Programmet forholder seg til NTNUs strategi om økt internasjonalisering og tverrfaglighet og til satsingsområdet Globalisering.

**2) Krav til masterprogram i forskrifter**

N5T – SUT innebærer 120 studiepoeng. Masteroppgaven vil være på 30 studiepoeng

**3) Studieplan, emnebeskrivelser. Kfr vedlegg**

Studieplanen bygger på emnetilbudet i de 2-årige masterprogrammene Fysisk planlegging og Urban Ecological Planning og masterkurs i arkitektutdanningen.

**4) Læringsmål og læringsutbytte**

Det er utarbeidet forslag til læringsmål og læringsutbytte både for programmet og de enkelte av de fire studieretningene i programmet.

**5) Fastsettelse av studieplan**

Programmet vil ha et programstyre med representanter fra de fem universitetene og ledet av Chalmers. Programrådet vil vedta studieplanen. (Jfr. Handbook on joint N5T master programmes). Hvert fakultet vil vedta det studietilbudet det enkelte fakultet bidrar med i programmet.

**6) Kostnadsberegning og finansiering**

Programmet bygger på eksisterende studieemner, men vil likevel kreve noe ekstra ressurser til utveksling av faglærere, *veiledning* og sensorer på tvers av institusjonen, til arbeid med studieløp- og felles faglig utvikling og overbygning og til reiser, fellesaktiviteter og møteplass for nordiske og internasjonale studenter etc. Det er sendt en søknad til konsortiet om dette.

**7) Oppdragsundervisning, egenbetaling**

Spørsmålet om skolepenger / egenfinansiering må utredes da flere av de andre samarbeidsuniversitetene vil kreve egenfinansiering fra studenter utenfor Europa.

**8) Antall studenter**

Maks. 30 fordelt på partnerne. (Dette er det samlede nye, årlige opptaket av studenter). Dette medfører 5-7 nye studenter til NTNU pr år.

**9) Opptakskrav og rangeringsregler**

Programmet vil **sette** opptakskrav i tråd med andre masterprogrammer ved fakultetet.

**10) Samarbeidende fakulteter**

Programmet involverer bare AB-fakultetet ved NTNU.

**11) Forskningskoping og tverrfaglighet**

Programmet vil stimulere til økt forskningsaktivitet mellom de samarbeidende universitetene og dessuten dra nytte av de tverrfaglige nettverkene som de enkelte fagmiljøene har.

Programmet er viktig også i det internasjonale samarbeidet NTNU har som Habitatuniversitet.

Habitat universitetarbeidet bygger også på nordisk samarbeid med Chalmers og Aalto universitetene.

**12) Eksterne samarbeidspartnere**

Programmet har ingen formelle samarbeidspartnere utover de deltagende institusjonene.

**13) Fellesgrader og fellesprogram**

Programmet tar sikte på å tildele en dobbel mastergrad, en mastergrad fra to av de samarbeidende universiteter (Universitet 1 og 2).

**14) Markedsvurdering**

En felles nordisk mastergrad vil være en interessant mulighet for studenter i de nordiske land, i Europa ellers og utenfor Europa, og samarbeidet mellom de fem universitetene vil øke attraktiviteten ved utdannelsen. Temaet er svært viktig og har stor global og lokal oppmerksomhet på grunn av den sterke urbaniseringen vi er vitne til og de miljø- og levekårutfordringene denne innebærer.

**15) Særskilte programaspekter**

Programmet legger mer vekt på tverrfaglighet enn teknologiaspektet og er et samarbeid mellom ingeniør, arkitekt / landskapsarkitekt og planleggerutdannelsene ved institusjonene.

## Studieprogramportefølje-endringer 2012/2013

AB-fakultetet har startet arbeidet med strategiplanen for 2012-2020. Vi ønsker i denne sammenheng å iverksette prosesser med den hensikt å oppnå en konsentrasjon av eksisterende studieprogramportefølje og emnetilbud. Videre vil AB-fakultetet i den fremtidige studieprogramporteføljen legge vekt på tverrfaglighet og utvikle samarbeid mellom ingeniør, arkitekt / landskapsarkitekt og planleggerutdannelse både ved NTNU og internasjonalt som vil gi en positiv effekt på læringsmiljøet.

På bakgrunn av ressursituasjonen vil Fakultet for arkitektur og billedkunst innenfor vårt faglige ansvarsområde tilby følgende studieprogram for studieåret 2012/2013:

1. Masterstudiet i arkitektur (300 studiepoeng) med en opptaksramme på 75 studenter.
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3. Masterstudiet i billedkunst(120 studiepoeng) med en opptaksramme på 15 studenter.
4. Bachelorstudiet i billedkunst (180 studiepoeng) med en opptaksramme på 20 studenter.
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6. Erfaringsbasert master i eiendomsutvikling og forvaltning (90 studiepoeng) med en opptaksramme på 18 studenter (EVU-opplegg).
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9. Internasjonalt masterprogram i Sustainable Architecture (Zero Emission Architecture) med opptaksramme på 15 studenter.
10. Nordic Master Programme in Sustainable Urban Transitions med en opptaksramme på 30 studenter, hvorav 5-7 studenter til NTNU.

Tore Haugen  
Dekan

Helge G.Gravås  
Seniorrådgiver

**Vedlegg: Studieplaner**

## Vedlegg:

### Program Nordich Five Tech

### Sustainable Urban Transitions

Study track: Sustainable urban structures (every other year)

Semester	Subject no.	Title	Autumn	Spring
1. semester	AAR 4515	Sustainable urban design	15	
1. semester	AAR4944	Planning for Sustainability and Development	7,5	
1. semester	FP4350	Planning theory and planning process skills	7,5	
2. semester	AAR4225	Integrated land use and transportation planning		7,5
2. semester	AAR4936	Analytical methods in physical planning		7,5
2. semester	AAR5260	GIS in urban planning		7,5
2. semester	AAR5270	Globalisation and urban development		7,5
3. semester	AAR8320	Introduction to theories and methods of science	7,5	
3. semester	FP4350	Planning theory and process skills	7,5	
3. semester	AAR4944	Planning for sustainability and development	7,5	
3. semester	AAR4100	Introduction to Norwegian Built Environment	7,5	
4. semester		Master thesis		15

Study track: Urban ecology (every other year)

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Tore Haugen  
Dekan

Helge G.Gravås  
Seniorrådgiver

**Vedlegg: Studieplaner**

## Nordich Five Tech:Sustainable Urban Transitions

Study track: Sustainable urban structures (every other year)

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4. semester		Master thesis		15

Study track: Urban ecology (every other year)

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## Memo

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To: Nordic Five Tech / SUT - group

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From: Hans Christie Bjonness

## Urban Ecology

### NTNU – Chalmers/Aalto

#### Competitive edge

An up front challenge for planning and development practitioners and educators is to address *the interface of equity, environmental sustainability and civil society* in urban interventions in local urban contexts in developing countries. How to address urban poverty, in areas with environmental conflicts and in realities with government restrictions on civil society organisations? 'City beautiful' projects can easily dislocate vulnerable homeless, with a weak community organisation, unable to unite and oppose forced removal. Female headed households in their struggle for survival, and for creating safe upbringing environments, are the most vulnerable.

There is an exponential growth of non-formal build environments in developing countries. Historical city centres and urban villages are also being excluded from formal planning efforts. However, the local as well as macroeconomic role of informal sector in development must also be recognised. Meaningful intervention in non-formal, often called slum neighbourhoods of negotiated, but formally not accepted, space has to be addressed at two levels.

First, the internal strength of the community and its institutional base, its 'glue', has to be approached together with resources, livelihood assets and skills, and land relations. It is our experience that this start with community self-identification of strength is essential in contributing to positive change where the community is in charge. Environmental auditing of the community is also a part of this process.

Secondly, in efforts of integrated action planning the strategic levels of outer governance, and non dependency creating critical NGO support, have to be assessed. There is a recognition that community and target group area and right based developmental efforts require lasting government recognition.

The role of universities in this community driven process with local government recognition and support will always be marginal. But independent universities can identify local knowledge and contribute with contextual information needed for community initiatives and local government interventions. A long term involvement of universities of the South and North in cooperation is meaningful in creating a social-ecological and area-based livelihood information base and support to local area and right based development initiatives. This can contribute to exchange of local knowledge and to strategic governance efforts.

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	<a href="http://www.ntnu.no/byogreg">http://www.ntnu.no/byogreg</a>			

All correspondence that is part of the case being processed is to be addressed to the relevant unit at NTNU, not to individuals. Please use our reference with all inquires.

## Learning outcomes

After completing this study track the candidate should have:

### Knowledge and understanding

- Knowledge of two specific, underprivileged neighbourhoods (one in a developing country, the other in a Nordic country), their territorial strength in terms of organisation, resources, skills and access to land, but also their struggle, and changing livelihood conditions.
- Experience in how to address both non-planned and planned neighbourhoods in urban centres and fringe areas for the purpose of livelihood improvements, tenure security and urban upgrading in contexts of conflicts of objectives of equity, environmental sustainability and civil society interests.
- Understanding of specific cases of building strategic responsibility and action at higher levels of urban governance and management in terms of 'scaling up' local development initiatives.

### Abilities and skills

- Knowledge of integrated action planning and integrated local planning processes building both on local defined priorities and local ownership and higher levels strategic action.
- Competence in applying, examining and analyzing participative tools.
- Ability to use geographical information systems (GIS) as an important tool in urban mapping, planning and management.

### Judgement, synthesis and reflection

- Awareness of the struggle of the urban poor in terms of entitlements to land, work, and participation in the civil society, and overall livelihood improvements.
- Understanding of what are contextual and general issues in local and higher level urban transition in both developing and Nordic countries as well as their localised and interrelated nature.
- Knowledge on the interface and the potential conflicts between urban poverty and targeted strategies and urban environmental strategies.

## Internal structure

During the first year at NTNU, the study track is truly international in its contents and student recruitment and participation and is initially rooted in the Urban South. The *study environment* is intense through the initial field-work based course. The students explore communal strength, the nature of the civil society, resource base and land relations in dense and transforming neighbourhoods in the Urban South. How can spatial, environmental and livelihood improvements be sustained? This is the initial field based project course with additional 'knowledge subjects' on urban ecological theory and method.

The students form a 'real team' in addressing local issues and opportunities. The international students from developing countries are resource persons with rich, diverse cultural backgrounds and experience from densely populated urban environments. The Nordic and European students bring their societal context of welfare state, local governance and environmental challenges of urban centres. The 'third world cities' within European cities contribute to an increasing multicultural society.



Furthermore, the second semester starts with research method course, Preparation for Field Work for Master students, where the research project for the master thesis will be drafted, presented for peer reviews and assessed. During the spring there is another obligatory course on Urban Ecological Planning in Diverse Cultures on theory, The elective subjects are on GIS in Urban Planning, Globalisation and Urban Development and Planning for Disaster Recovery and Prevention.

The summer is reserved for field work for the master thesis, which in most cases will be in the urban south, or on localised or comparative issues between the South and the Nordic countries. The autumn semester will focus on additional knowledge subjects at Aalto or Chalmers, and the students will in seminar form present their field work study and findings. The supervisory team for the master thesis will be established before the summer fieldwork. During the last spring semester, full concentration will be on the master thesis.

*Add on: On degree achieved. On appointment of supervisor. Second year at Chalmers or Aalto or KTH*

**The second year** at Chalmers or Aalto is complementary to the Urban Ecology perspective of NTNU. At Chalmers, students will develop an understanding of the Urban Ecology approach by addressing equity, environmental sustainability and civil society engagement in a Nordic setting of social exclusion, urban poverty and attempts for urban renewal, and with a focus on citizen empowerment and participation. *At Aalto students will develop an interdisciplinary and creative understanding by addressing the key issues of urban ecology through laboratory work and selected studies from the university's six schools. They will be working in a new School combining the creative disciplines (architecture, urban design, urban and regional planning, design, media, and arts), but they will also have access to a variety of courses offered by the four Schools of Technology and the School of Economics. The core of their studies will be the Urban Laboratory, where they will address a selected contemporary issue related to urban ecology either in the Nordic or Southern context (such as segregation, multiculturalism, migration, post-disaster development, etc.), coupled with potential field studies and courses in urban and regional studies. The Laboratory continues during the second semester to support the writing of the Master's Thesis. Common seminars with the supervising team from will be arranged.*

For their fourth semester thesis work, students can choose between a) continuing Urban Ecology in the Nordic setting through field studies in Sweden (Chalmers) or Finland (Aalto) or b) returning to the South perspective supported by the international networks of all three universities.

## Courses:

### First year fall semester (NTNU):

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#### Urban Ecological Planning in Developing Countries (project) (15 credits)

This is a field based course in a developing country. The project work addresses integrated area development challenges at the neighbourhood level. The start is to identify community strength through positive efforts and achievements. Furthermore local institutional base and their functioning are mapped together with? local resources and skills, land tenure relations and interdependencies with higher levels. We also work with quality assessment of public spaces and their publicness. We work towards local action which can have both locally sustainable results and strategic impact on local government responsibility. The field studies and a joint report are group work.

### Urban Ecological Planning, Theory (7.5 credits)

This introduction course starts with development theory and an understanding of principles of another development in terms of territorialism, ethno-development and eco-development. It is also considered essential to get a workable understanding of the livelihood approach to development and an entitlement approach to deprivational poverty. The focus is on the informal part of planning. Issues of building sustainable societal development through civil society and cultural continuity are also addressed. There is an oral exam in this course.

### Urban Ecological Planning, Method (7.5 credits)

The course gives the students introduction to tools for effective work in the field in terms of action planning principles and menu. It also gives the students experience to work with the Logic Framework Approach in terms of project formation mainly based on a stakeholder approach to local development. The course also introduces power and participatory development in planning. There is an oral exam in this course.

## First year spring semester (NTNU):

### Urban Ecological Planning in Diverse Cultures (7.5 ects)

The course builds on the Urban ecological theory course offered in the first semester and expands on the entitlement approach to understanding poverty and the livelihoods model for planning for action. In addition, the course explores various multidisciplinary issues that are critical to understanding urban development in the developing world such as political ecology, post colonial political economy, race, caste and ethnicity and gender.

The course will also aim at addressing the need for informal territorial planning to relate to the instruments and mechanism of formal city level planning and the theoretical basis for finding the bridges between the two.

Evaluation in the course is based on a theoretical paper and class assignments and discussions.

### Field methods and research proposal writing (7,5 ects)

The course is to give basic knowledge of research and the methods relevant to students of Urban Ecological Planning. There will also be an introductory presentation of the different methodological approaches applied in the various disciplines and scientific traditions. The student is to learn how to write a project proposal, design a research project and write a research report. A major part of the course will be to develop, discuss, evaluate, present - and finally write their own master thesis research proposal. Through this process the various methodological approaches and methods will be presented and discussed. The final proposal will be the basis for assessment. Developing the students' own research proposals will constitute the core of the course. This will be directly linked to lectures and colloquia relevant to each stage of the process.

### AAR5260 - GIS in Urban Planning (7.5 ects)

The course is an introduction to Geographical Information Systems (GIS). Theory, methods, techniques and applications are illustrated in lectures, seminars, demonstrations and practical exercises. Issues that will be covered are: GIS concept, the raster and vector principles, data capture, data modelling, handling of attribute tabular data, spatial analysis and query, mapping layout etc.

**Electives:****Globalisation and Urban Development (7.5 ects)**

The course will deal with the implications of contemporary globalisation and its uncertainties for urban development in cities of the North and the South. The implications of economic globalisation and neo liberal forms of governance have far reaching consequences for local urban development. These consequences range from the physical restructuring of cities and emergence of new kinds of urban forms to the increasing role of the private sector as a major actor in urban development and consequently in urban governance. Recently, global economic change is being closely linked to the rapid levels of urbanisation in developing countries such as India and China, making it very critical for professionals to understand its global significance. The course will cover both the physical and institutional dimensions of urban development and will convey a comparative perspective of change in the developed and the developing world.

**Planning for Disaster Recovery and Prevention (7.5 ects)**

The planning of this course is in progress.

**Experts in teamwork (EiT) - Sustainable Architecture (7,5 ects)**

It is central in EiT that the students should apply their academic learning, and develop teamwork skills, and that they should be part of a multidisciplinary team. In this way the learning outcome corresponds to a demand from the public sector and industry to give the students relevant professional skills.

EiT was created in 2001 as a response to a strong demand from industry for collaborative expertise. It was argued that students should be trained in using the knowledge from their discipline to contribute to solving multidisciplinary tasks in the workplace, and that they should gain experience in working with people with different backgrounds than themselves during their studies.

Teaching in EiT takes place in units called "villages". An EiT village is characterized by:

- A "class" of 20 - 30 students with different backgrounds (students are divided into smaller teams of typically 5 students).
- A unique theme such as a real-life issue faced by the public or private sector.
- It is facilitated by a professor and two teaching assistants.
- All villages share the same learning outcomes, teaching method and assessment criteria.

**Second year fall semester (Chalmers):****Advanced theory and methodology - master's thesis preparation course (7,5 ects)**

The course is designed as an initiation to the preparation and formulation of an advanced programme for a given assignment in general and a Master's Thesis project in particular. The course intends to provide a scientific context to the Master's Thesis preparation and an overview of relevant literature, innovative projects and experimental approaches in urban architecture.



## Suburbs: Design and Future Challenges (22,5 ects)

A design studio which gives knowledge about the significance of the social dimension of sustainable development, focusing on the individuals influence on urban development in suburban mass-housing areas built in the 1960s and 70s in Sweden. Issues these areas are dealing with involve physical segregation and social exclusion, reduction of services and local investment, as well as an aging building stock. Methods and tools for public participation of citizens in planning and design is a central aspect of this studio.

## Second year fall + spring semester (Aalto):

### Urban Laboratory (autumn + spring, 10 + 10 cr)

Urban Laboratory, unlike traditional courses, is a new working method that will integrate the input of some existing master's courses (, scientific and practice-based research, fieldwork and the involvement of practitioners with their particular expertise and problems. The method is flexible, and the subjects studied, as well as the input and workload of participating students will be adapted to their needs. During the autumn semester, students will develop their interdisciplinary understanding by addressing a contemporary urban issue related to urban ecology (such as segregation, multiculturalism, migration, cultural preferences) through urban and regional studies and a fieldwork (potentially together with Chalmers). During the spring semester, the Laboratory will support the writing of the Master's Thesis (Laboratory and Thesis work giving altogether 30 credits).

### Elective Studies

In addition to the Urban Laboratory, the students can choose from a number of elective courses from the School combining creative disciplines and also other Schools of Aalto University (particularly School of Engineering and School of Economics). Some of the courses are also designed for an interdisciplinary group of students and master's programs (such as Creative Sustainability and Managing Spatial Change). The following is only a selection from the offering. The number of students accepted and the eligibility varies with the course. Existing courses are visible in the Noppa portal (<https://noppa.aalto.fi/noppa/app>)

### A-36.3330 Urban Renewal, studio (10 cr), autumn semester

The spatial, plastic, programmatic and physical development of built urban environments and complementary design management of complex room programs. The course may contain a voluntary fieldwork period in Finland.

### A-36.3504 City in Transition Theory P (5 cr), autumn semester

The reality of architecture, building and urban planning, design and economics outside Europe, with cultural understanding as the point of departure. Emphasis is put on the historical, socio-economic and cultural development of emerging nations with local vernacular principles. The course highlights the environmental, social and economic aspects of sustainable development and explores the dilemma of development. The course has guest lecturers from different universities and organizations. Period I is equal to Yhd-12.3082: State of the World and Development.

**Maa-20.3510 Strategic Urban and Regional Planning (4 cr), autumn semester**

The course will offer insights to the challenges and variety of planning tools and methods applied concerning especially Finnish urban regions. The course presents the historical and contemporary approaches to strategic urban and regional planning. Strategic planning is approached as participatory, reflective and multidisciplinary practice.

**21A00310 Introduction to Management (6 cr), autumn semester**

The main objective of the course is for students to develop their understandings of management relating to the self, groups, organizations, and wider society, and the resources required for management. Students are introduced to widely accepted concepts of relevance to management and organizations, and develop and practice their academic crafts.

**21E80000 Gender, organizations and management (6 cr), autumn semester**

The objective of the course is to present students with a research-based and practically grounded understanding of how gender figures in organizations and management. Case examples of gendered practices in different types of organizations are presented, and an overview of gender in the labour market and in society is offered. The course enables students to form a substantiated view of gender, organizations and management, and to critically scrutinize established notions therein.

**21E10000 How to change the world: Innovation towards sustainability (6 cr)**

Corporate responsibility (CR) and sustainable development imperatives are typically framed as necessary requirements, "a must-do", for businesses. This course aims at breaking and broadening this negatively motivated mindset by exploring paths and alternatives for creative and innovative responses to sustainability challenges. Global environmental and social sustainability problems are taken as starting points for innovation of new forms of economic activity, business models, and organizational forms. The course addresses three main areas of sustainability innovation: energy and material efficient business models, poverty alleviation through entrepreneurial approach and social entrepreneurship.

**07124 Context / Upgrading a Neglected Space (12 cr), autumn semester**

In the module the objective is to find and define an existing space - interior or intimate outdoor space where you believe is some hidden potentiality. The task is to recognize an ordinary, forgotten space and transform it into an extraordinary spatial sensation. Identifying and learning to use the tools to manipulate the spatial atmosphere are the key objectives of the module. In its best the goal is in revealing architectural qualities - or even poetry - in an everyday environment and tune them visible.

**10157 Designing Services (12 cr), autumn semester**

The learning objectives of the module are (1) understanding the characteristics of services that distinguish them from products and identify relevant design tools and methodologies that can aid designers in dealing with such service characteristics, (2) becoming familiar with the perspective of service-dominant logic, service logic, networked service systems and several ways services have been categorized, (3) understanding the concepts of co-design, co-creation and co-production, (4) becoming familiar with service co-design tools and mindset, (4) learning to apply service design visualization and prototyping methods, (5) learning to make sense of organizational structures, business models and networks, (6) learning critical design and storytelling approaches, (7) practice with cross-disciplinary and cross-cultural co-operation and collaboration, (8) critically evaluate the methods and framework applied during the case study/project.

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## **Second year spring semester (Chalmers or Aalto):**

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### **Master's thesis (30 credits)**

- Examiner: Designated by the chosen second year university
- Two Tutors: One from NTNU and one from the second year university

### **Contents**

The student defines and develops a project based on their particular area of interest related to Urban Ecology and can choose between a) continuing Urban Ecology in the Nordic setting or b) returning to the South perspective supported by the international networks of all three universities.

### **Eligibility**

The study track accepts students with a bachelor degree in Architecture, Landscape Architecture, Planning, or Engineering. For the second year of studies, students with a background in Architecture will continue at Aalto while all other students will continue at Chalmers.

### **Degree**

Cumulatively the study track will result in 120 higher education credits. Students attending this study track will receive two master's degrees (one from each university they attend). Students will thus receive a Master of Science in Urban Ecological Planning from NTNU, and then either a Master of Science (two years) from Chalmers or a Master of Science in Architecture from Aalto University.



## N5T SUT study track description.

### Transitions of Urban Structures

Norwegian University of Science and Technology (NTNU), University 1  
Technical University of Denmark (DTU), University 2  
Royal Institute of Technology (KTH), University 2

#### Abstract

The dramatic growth and transformation of urban areas represent major global environmental challenges and affects important factors of living conditions. If we are to meet these challenges and plan for sustainable urban development, we must develop new planning strategies, methods and tools for sustainable urban development. In order to reduce greenhouse gas emissions and improve the urban environment and citizen's living conditions, the urban structure including the infrastructure, land use and transportation pattern must be reconsidered. A great challenge to urban development is to design the urban structure in a way that reduces the cities' ecological footprint. This often means a long-term change of the urban structure, the land use, the transportation system and the infrastructure.

In future cities new development should take place mainly within the existing building zone through conversion and densification without compromising existing qualities of the city. City reconstruction will be the future predominant way to build a city, where development of a city's land use, transportation system and infrastructure will require relocation of the businesses in town. The principle of establishing the right business at the right place must be followed.

In this study track we will deal with how these challenges best can be solved in an integrated planning process where land use, public transport, car traffic and infrastructure are seen together in relation to the development of the urban structure location of transport nodes, the density of the development and the design.

#### Competitive edge

The perspective in this study track is the urban structure and how organising the land use, the public transport system, the car traffic and the distribution of power and water system influences the ecological footprint of the cities. We will have focus on how to strive for carbon – neutral cities by improving eco efficiency in the urban structure, developing sustainable transport, developing and using renewal energy and develop well planned and organised neighbourhoods with high quality of life and increasing sense of place.

By utilizing high academic competence by the Technical University of Denmark (DTU), Royal Institute of Technology (KTH) and the Norwegian University of Science and Technology (NTNU) this study track will give an outstanding multidisciplinary competence of high international level in sustainable urban planning with focus on urban infrastructure.

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All correspondence that is part of the case being processed is to be addressed to the relevant unit at NTNU, not to individuals. Please use our reference with all inquires.

## Learning outcomes:

After completing this study track, the candidate should have:

### Knowledge and understanding

- insight in how sustainability and urban development are interdependent,
- knowledge and a better understanding of the connections between land use, urban form and urban infrastructure.
- knowledge about how integrated overall planning issues for land use, transport and urban infrastructure can contribute to a more sustainable urban development.
- an understanding of urban transitions and the implications for future urban development in cities of the North and the South.

### Abilities and skills

- insight in developing land use -, transport- and infrastructure plans for a more sustainable city development, based on the principle of an integrated planning process.
- ability to use geographical information systems (GIS) as an important tool in urban planning.

### Judgement, synthesis and reflections

- insight in and being more aware of the challenges connected to the global environmental challenges and living conditions  
the ability of leading integrated planning processes and use the knowledge in processes that are firmly rooted with the citizens.
- the ability to develop strategic plans for a larger city in relation to the transition of the technical infrastructure and the interaction between .

## Internal structure

The study track will start at the NTNU in Trondheim, where the students will be given an introduction to planning for sustainable urban development both in a local and a Nordic context. The first two semesters the teaching will be offered at the Norwegian University of Science and Technology where the Faculty of Architecture and Fine Art will be responsible for the program.

Students with a B.Sc. (eng) background can stay the third semester at Technical University of Denmark (DTU) in Copenhagen. The second year at DTU will allow the student to go even deeper into analyzing the relationship between infrastructure and land use development by studying the plans and actual developments of an international metropolitan region. This will be complemented with the opportunity for the student to develop a strategy for future development of a chosen larger city.

Students with a background in architecture or planning can stay the third semester at KTH in Stockholm. The second year at KTH offers two courses that refer to the human dimensions of urban environments, which are studied both from a theoretical and empirical perspective. In



addition, students can choose among two project courses, either towards planning or urban design. The projects are advanced learning experiences in which students should address some of the main challenges in contemporary urban planning and design in a practical setting.

In the fourth semester they write a Master Thesis at DTU or KTH with supervisors from DTU or KTH and NTNU

## Courses

### 1. semester (autumn) at University 1 (NTNU):

#### Sustainable urban design - project (15 credits)

This studio works on complex, large scale urban design and architecture projects. The specific topics are based on contemporary urban phenomena and transformation processes such as sustainable development of new urban areas, densification of urban nodes, revitalization of urban quarters, activation of former harbours, stations or industrial areas, suburbia, and transformation of the urban, cultural landscape..

Other topics that are explored are urban systems and topologies, mixed-use developments, flexible designs and rule systems (regulation & openness), big and small scale, growth and reversibility (mega & shrinking cities), private-public partnerships, corporate urbanism, urban marketing and branding, new mobility and communication modes, climate change, and overall sustainability. Detailed urban design visions, concepts and proposals to be elaborated in the form of development and master plans include transportation and street systems, open spaces and landscape, urban structures and forms, uses and activities, building and architectural scenarios.

#### Planning for sustainability and development (Theory) (7,5 credits)

The course is to give insight into how "sustainability" and "development" is interdependent in a global perspective. The course will highlight planning and implementation of physical - interventions, and its underlying social and material contexts, in a developing world perspective. Modes of planning conducive for achieving sustained development with a particular emphasis on urban challenges. Architecture, construction, and building materials as constituting elements of 'sustainability'. Use and management of natural resources, Housing and settlement planning. Agents and institutions and their impact interventions and on modes of development. New institutionalism and endogenous social and economic development

#### Planning theory and process skills (7.5 credits).

This course is essential in introducing to the students classical theories on the understanding of the role, and limitations, of planning in society, as well as updated literature on planning, policies and power. Communicative planning theory and its philosophical basis is also being introduced. Exam is a partly a paper which purpose it is to contribute to the theory of the master thesis. The second part of the exam is a written exam.

## 2. semester. Spring.

### **Integrated land use and transportation planning (7, 5 credits)**

The course will address land use as a driving force in the development of cities and regions. The impact of land use on travel behavior and the interaction between the various types of transport as well as requirements for transport standards depending on various land use, will be explored and communicated, planning and impact assessment reports as management tools will be introduced. Use of travel habit surveys, databases, GIS technology and impact analyses will also be a part of the course.

### **Analytical methods in physical planning (7, 5 credits)**

Demographics and population development: projection methods, calculation of capacities and needs based on demographic changes (need for housing, public services, infrastructure). Norwegian planning and analysis systems based on demography, Spatial analysis and location analysis using GIS. Impact Analytical methods, evaluation methods.

### **GIS in Urban planning (7, 5 credits)**

The course is an introduction to Geographical Information Systems (GIS). Theory, methods, techniques and applications are illustrated in lectures, seminars, demonstrations and practical exercises. Issues that will be covered are: GIS concept, the raster and vector principles, data capture, data modeling, handling of attribute tabular data, spatial analysis and query, mapping layout etc.

### **Globalisation and Urban Development (7.5 credits)**

The course will deal with the implications of contemporary globalisation and its uncertainties for urban development in cities of the North and the South. The implications of economic globalisation and neo liberal forms of governance have far reaching consequences for local urban development. These consequences range from the physical restructuring of cities and emergence of new kinds of urban forms to the increasing role of the private sector as a major actor in urban development and consequently in urban governance. Recently, global economic change is being closely linked to the rapid levels of urbanisation in developing countries such as India and China, making it very critical for professionals to understand its global significance. The course will cover both the physical and institutional dimensions of urban development and will convey a comparative perspective of change in the developed and the developing world

## 3. semester. Autumn.

### **University 2: Technical University of Denmark (DTU)**

The stay at DTU will expand the theoretical understanding of strategies for change of urban infrastructural systems and facilitation of the urban economical development. This will be supplemented with the classical perspective on the link between transport modes, transport



infrastructure and urban structure by allowing the students to analyze the urban and transport development in a given metropolis. In the third semester the students are given an insight in general quantitative methods and in change management.

### Urban Planning and Sustainable Urban Development (10 credits)

The core of this course is the interrelation between spatial planning on the regional level, transport infrastructure and sustainable development: Structure and Land-use, City and Region. But other elements are also touched upon, and the course is placed in a global context. The students work in groups with an urban metropolitan region like New York, Stockholm, Mexico City or Shanghai. The group work is predominantly analytic: how is the given region handling the transition towards a more sustainable urban structure. The students use their theoretical knowledge in their analysis of local planning documents, strategic documents etc. These studies are often supplemented with interviews of local planners (on telephone or by e-mail).

### Urban Technology and Management (10 credits)

The core of this course is to create strategies enabling and governing urban transitions towards sustainable development for a given city administration: Governance and Transitions, City (and Region). The theoretical input is a combination of transition theories (like Frank Geels) and theories of strategic spatial planning (like Healey) The students choose a city to focus on and identify a relevant urban topic for their work: development of a multi-centre structure and transport infrastructure in Dar-es Salam, creating value with multifunctional water infrastructure in Klaipeda, Urban organic food production and hanging gardens in Manhattan, redesigning Ørestaden to make it liveable .. The group work is predominantly creative and strategic, built on an initial analytic basis.

### Facilities Management (5 credits)

Facilities management is working in a smaller scale than the urban scale, but some work in relation to this course considers strategies for transformation of the municipal property administration towards 'Sustainable Facilities Management'. In some respects the boundaries between facilities management and strategic urban planning are becoming blurred, making FM relevant for urban planners.

### Introduction to planning (5 credits)

The basic idea of this course is to give the students a brief introduction to quantitative, mathematical methods, not to make them experts within this field, but to make more qualitative orientated students aware of the possibilities of mathematical modelling, operations management and operations research.

### 3. semester. Autumn.

#### University 2: The Royal Institute of Technology, KTH, Sweden.

The second year at KTH offers two courses that refer to the human dimensions of urban environments, which are studied both from a theoretical and empirical perspective. In addition, students can choose among two project courses, either towards planning or urban design. The projects are advanced learning experiences in which students should address some of the main challenges in contemporary urban planning and design in a practical setting.

#### Project Sustainable Urban Planning - Strategies for Urban and Regional Development (15 credits)

In this course the collected knowledge in urban and regional is applied in a practical setting. The project work is conducted in small groups, and is carried out in cooperation with relevant public and private bodies. The focus of the course will be on making synthesis and methods for practical urban planning projects. Furthermore, the groups are to analyse how their project proposals relate to different social groups, key stakeholders, environmental impact and politics. The project is conducted by the students fairly independently where lectures and seminars will serve as inspiration and guidance. Besides the group work, the course consists of two individual assignments in connection to the project.

#### Project Sustainable Urban Design - Public Places and Spaces (15 credits)

The course will provide a profound insight into the complexities of public space and the concept of place as imaginary and physical form. Participants will receive an understanding of the discourse on public space as it is known in urban theory thereby developing the ability to discern the potentials and limitations of space in architectural terms. The project work will be directed towards a complex social issue such as social segregation, the relation between virtual and physical meeting places or the role of public space in contemporary society, where the student is trained in developing concrete solutions of both high functionality and architecturally expressive standards addressing these topics.

#### Urban Theory, Advanced Course (7,5 credits)

The course, that will have a worldwide outlook, deals with urban theory in the sense of different ways of understanding cities the forces shaping cities, the physical patterns in the urban landscape and the consequences on life and planning. There are different theories of contemporary urban development, e.g. cities being understood as generators of economic growth, as spaces of mobility, as places for cultural and public life, as spaces of environmental degradation and/or green living, as places for reproduction and everyday life, as spaces where ethnic, socio-economic and/or gender divisions manifest themselves, as spaces driven by desire or fear, etc. These varying perspectives on urban development and views on what the problems are, give rise to different implications and tasks for planning.

### Social and Cultural Issues in Planning (7,5 credits)

The course takes its starting point in interrelations between everyday life, urban structures and global processes, for example structural changes in global economy and increasing multicultural citizenships and the impacts on living conditions for people in various parts of the world. To be aware of the social and cultural implications of planning and design decisions as well as to consider the impact of social and cultural conditions on planning and design processes is a challenging and important task for planners and architects. Social issues concern generally how people in a society relate to each other and interact and how we build institutions that become stable or not. Cultural issues concern in this course what everyday life activities mean to us as well as what material objects and built environment mean but also how we through planning try to create conditions for dynamic cultural processes.

### Study track: Transitions of urban structures

Sem	Title	Autumn	Spring
<b>University 1: NTNU</b>			
1.	Sustainable urban design	15	
1.	Planning for Sustainability and Development	7,5	
1.	Planning theory and planning process skills	7,5	
2.	Integrated land use and transportation planning		7,5
2.	Analytical methods in physical planning		7,5
2.	GIS in urban planning		7,5
2.	Globalisation and urban development		7,5
<b>University 2: DTU</b>			
3.	Urban planning and sustainable urban development	10	
3.	Urban technology and management	10	
3.	Facilities management	5	
3.	Introduction to planning	5	
<b>University 2: KTH</b>			
3	Urban Theory, Advanced Course	7,5	
3	Social and cultural issues in planning	7,5	
	Electives		
3	Project sustainable urban planning – strategies for urban development and regional development	15	
3	Project sustainable urban design	15	
<b>University 2 and 1:</b>			
4.	Master thesis		30

## Eligibility

This track will be offered to students with a bachelor in architecture or civil engineering (or a corresponding three years study).

## Degree.

This study track can offer a

- master of technology (civil engineer) ( KTH)
- master of science in engineering (DTU)
- master of architecture, (NTNU)
- master of physical planning (NTNU)

○ depending on the content of the bachelor degree.

○

# Nordic Master Program 2010

## Application

### Project information

#### Title of the Nordic Master Program

Nordic Master Program in Sustainable Urban Transitions

#### Project number

NMP-2010/10201

## A - Project partners

### A.1 Co-ordinating institution

#### A.1.1 Co-ordinating institution

Name of institution: SE-Chalmers University of Technology in Göteborg

#### A.1.2 Project coordinator

Name: Kain, Jaan-Henrik

Gender: Male

Title: Associate Professor

Position: Researcher

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Mobile number:

Fax (including country and area code):

Institution: SE-Chalmers University of Technology in Göteborg

Department: Department of Architecture

#### A.1.3 Administrative contact person

Name: Perrusquia, Gustavo

Gender: Male

Position: Director of Internationalization

E-mail: gustavo.perrusquia@chalmers.se

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Sweden

Phone number: +46 31 772 25 24

Mobile number:

Fax number:

Institution: SE-Chalmers University of Technology in Göteborg

Department: Office of Planning

#### A.1.4 Person in charge of finance on behalf of the Consortium

Name: Skogsäter, Per

Gender: Male  
Title: Mr.  
Position: Administrative Head, Dept. of Architecture  
E-mail address: per.skogsater@chalmers.se

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Sweden

Phone (including country and area code): +46 31 772 24 03

Mobile number:

Fax (including country and area code):

Institution: SE-Chalmers University of Technology in Göteborg

Department: Department of Architecture

### A.1.5 Legal representative (Rector or equivalent)

Name: Markides, Karin  
Gender: Female  
Position: President (Rector)  
E-mail: karin.markides@chalmers.se  
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Sweden

Phone number: +46 31 772 25 50

Mobile number:

Fax number:

Institution: SE-Chalmers University of Technology in Göteborg

Department: Management

## A.2 Partner institutions providing Master's degrees

### Partner institution

Name of institution: FI-Aalto University - School of Art and Design  
Name of department: Department of Architecture  
Contact person: Lapintie, Kimmo  
Gender: Male  
E-mail address: kimmo.lapintie@tkk.fi  
Correspondence address: Department of Architecture  
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Fax (including country and area code):

Expoline as  
v/ Arne Rian

## Prisforespørsel for produksjon av messevegger

Hvert år deltar NTNU på ca 10 større utdanningsmesser i Norge. På disse messene deltar NTNU med en messestand på enten 27 kvm eller 54 kvm. NTNU benytter messesystemet Expolinc, Pop-up Magnetic.

Vi ber dere om pristilbud på produksjon, dvs. print og ferdigstilling av baner, tilpasset dette systemet.

Antall baner:

60 baner til 3x3 system

10 baner til 3x4 system – ekstra høye

4 - 6 bordbaner til transportkasse

Banene skal produseres med et godt egnet materiale. Det er viktig at materialet tåler mye og er vaskbart. Vi ber også om å få en materialprøve levert sammen med pristilbudet. Materialprøven kan leveres til meg på mitt kontor. Ferdigstilte filer til bruk i produksjonen leveres av NTNU i format jpg eller pdf etter avtale.

Forventet leveringstidspunkt er midten av november.

### Pris:

Beregn pris pr. bane (inkludert ferdigstilling)

Spesifiser evt. ekstrakostnader (oppstart av trykk, levering e.l.)

Priser oppgis eks mva.

### Grunnlag for valg:

Valg av leverandør gjøres på grunnlag av pris, materialprøve, kompetanse og helhetsvurdering.

Vi ber om at pristilbudet og materialprøven er oss i hende innen 12.oktober.

Vennlig hilsen

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All korrespondanse som inngår i saksbehandling skal adresseres til saksbehandlende enhet ved NTNU og ikke direkte til enkeltpersoner. Ved henvendelse vennligst oppgi referanse.

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### A.3 Other partners

### A.3 Other partners

## B - Content of the master programme

### B.1

#### B.1 Subject area of the master programme

##### Subject area

Urban planning, design, transition and management processes are highly complex and laden with both short-term and long-term uncertainties and there are immense needs for integrated knowledge development and capacity building targeting involved professionals. This poses intricate demands on higher education institutions when providing courses and programs for future professionals. The proposed master program in Sustainable Urban Transitions will strengthen and promote a common Nordic platform in higher education for urban development internationally by offering one of the most comprehensive and relevant master programs in the urban development topic area.

The focus of this master programme is on sustainable urban development, but within different fields of application at the five participating universities: Chalmers - Localised planning and design for sustainable urban development; Aalto - Human-centered environment (social and cultural dimensions); NTNU - Urban Ecological Planning (area based upgrading, local and strategic solutions, local governance); KTH - Planning of sustainable districts, cities and regions; and DTU - Transition of sociotechnical infrastructure.

Together, these different fields of application forms a new joint subject area: Planning and design for Sustainable Urban Transitions, where systems thinking, participative and scenario approaches, risk reduction, research by design and generative planning are key concepts. However, as this master program is still very much in a phase of intense development, its final name still remains to be decided upon; are we working with transitions, futures, responses, change?

The profile of the program will be sociotechnical, i.e. the merging of technical and social sciences, but

with technology as the point of departure.

## B.2

### B.2.1 Description of the master programme

#### Description

The overall development objective is to contribute to Sustainable Urban Transitions, and thereby to a shared international knowledge base.

The overall course objective is inter-/transdisciplinary competence building among young professionals to develop their capacities a) to address principles of human settlements, b) to engage in new and shared knowledge production and c) to develop an improved practice contributing to upgrading existing cities as well as to Sustainable Urban Transitions.

The program advocates an integrated triple approach:

1. Urban Planning & Design/Urban Ecological Planning: Area-based reality studies - relying on participative, communicative and research-by-design approaches - will generate an understanding of locally identified and integrated issues and potential for local and territorially based solutions.
2. Urban Structures: System-based studies will locate the "hardware" of urban development (e.g. built environment, transport systems, urban green, urban water) within their interlinked socio cultural settings (e.g. democratic systems, multi-stakeholder settings, worldviews, health, safety). A common point of departure will be a systems approach to urban transformation (e.g. resilience, efficiency, complexity, change/transition, and risk and uncertainties).
3. Urban Futures: Integration of area-based and system-based working modes provides an understanding of urban development depending on cascading scale-levels, but also links insights from science, practice and everyday urban life. By introducing scenario thinking (i.e. urban futures), students will be provided with skills in management of urban complexities, as well as an understanding of needed changes in behaviour, urban policy and urban practices.

All three modes include theory reviews, appraisal of methods and field studies.

The program will be based on four modules (semesters). For efficiency and thrust, the modules will mostly use selected existing courses as points of departure, but submit these courses to continuous development and improvement through the program's evaluation and quality management scheme. However, a new introductory course on Sustainable Urban Transitions will give a comprehension of the diversity of urban situations and challenges within the Nordic countries as well as globally, and of the theoretical and methodological challenges linked to a new paradigmatic base of Sustainable Urban Transitions. Moreover, a joint summer school will rotate annually among the partners but with faculty from all universities.

Although much of the program content (courses) is already in place, there are a number issues to be resolved during the development period, e.g. if we should aim for a 1+1 year approach (involving only two partner universities) or aim for a more open curriculum encouraging student mobility after each semester or even for individual courses. Another issue is at what stage the thesis work is initiated; during semester 2, during summer school, or during semester 3, and also how master thesis initiation, supervision and grading will be arranged, in turn linking to questions of double versus joint degrees.

Most importantly, the development period will also be used to discuss how the different profiles and strengths of the participating universities can be employed to form the strongest possible Nordic master program. A major task will be to shape and coordinate how the courses offered by the different partners best can be integrated into one coherent master program, with clear optional thematic tracks of study. Here, we foresee quite a bit of development activities and potentially new also courses.

The tentative curriculum outlined below is based on a student mobility style:

Semester 1 - At Chalmers (as host university):

**Compulsory:**

a) New introductory course in Sustainable Urban Transitions (7.5 ects). Joint course with faculty from all the Nordic 5 Tech Universities.

**Elective:**

a) Planning and Design for Sustainable Development (22.5 ects).

b) Suburbs: Design and Future Challenges (22.5 ects).

c) Architectural and Urban Conservation (22.5 ects).

d) Urban and architectural design (15 ects).

Optional course: Urban Ecological Planning in Developing Countries at NTNU (22.5 ects).

Semester 2 - At the Aalto, NTNU or KTH (30 ects). At the end of the semester 2 there is a joint meeting in one of the partner universities for the purpose of presentation of master thesis and selection of supervisor and "home university". This is also a social event for team-building among students, teaching faculty and supervisors.

**Semester 2: Aalto:**

**Elective:**

a) City in Crisis II (7 ects)

b) Local Development and Globalisation, studio (10 ects)

c) European Metropolitan Planning (5 ects)

d) Planning Theory (5 ects)

e) Sustainable urban design (10 ects)

f) Methodology and Scientific Communication (6 ects)

**Semester 2: KTH:**

**Compulsory:**

a) Urban Development and Planning (7.5 ects).

b) Urban Infrastructure (7.5 ects).

c) Principle of Real Estate and Urban Economics (7.5 ects).

d) Planning Theory and Urban Governance (7.5 ects).

**Semester 2: NTNU:**

**Compulsory:**

a) Urban Ecological Planning: Research Method and Proposal Writing (7.5 ects)

**Elective:**

a) Urban Ecological Planning in a Multi-Cultural City (15 ects)

b) Urban Ecological Planning in Diverse Cultures (7.5 ects).

c) Planning for Risk Reduction and Disaster Reconstruction (7.5 ects).

d) GIS in Urban Planning (7.5 ects)

e) The Global City (7.5 ects).

f) Planning for Sustainability and Development (7.5 ects).

**Between semester 2 and 3:**

Summer School and field work.

Semester 3 - At one of the five universities (30 ects). At the end of the semester there will be a joint meeting as a starting point for the thesis work during semester 4.

**Semester 3: Aalto:**

**Elective:**

a) Introduction to Comprehensive and Regional Planning (10 ects)

- b) Urban Renewal Studio (10 ects)
- c) City in Crisis I (5 ects)

Semester 3: Chalmers:

Compulsory:

- a) Research by Design (7,5 ects).

Elective:

Same offer as Semester 1

Semester 3: KTH:

Compulsory:

- a) Sustainable Planning and Design (15 ects).
- b) City Networks in Regional Contexts (7.5 ects).
- c) Social and Cultural Issues in Planning (7.5 ects).

Semester 3: DTU

Compulsory:

- a) Urban Planning and Sustainable Urban Development (10 ects).
- b) Urban Technology and Management (10 ects).
- c) Environmental Management and Ethics (5 ects).
- d) Facilities Management (5 ects).

Semester 3: NTNU (is building on the summer's field work).

Compulsory:

- a) Analysis of Field Work for Master thesis in Urban Ecological Planning (15 ects).
- b) Planning theory and process skills (7.5 ects).

Elective:

- a) Architecture and Anthropology (7.5 ects).
- b) Housing Theory and History (7.5 ects).
- c) Gender and Social Change (7.5 ects).

Semester 4 - Master Thesis at one of the five universities (30 ects). However, supervision, assessment and grading will be managed jointly among the partners.

## **B.2.2 Summary**

### **Summary**

Urban planning, design, transition and management processes are highly complex and laden with short-term and long-term uncertainties. There are immense needs for integrated knowledge development and capacity building targeting involved professionals. A master program in Sustainable Urban Transitions will strengthen a common Nordic platform in higher education for urban development internationally by offering one of the most comprehensive and relevant programs.

The course objective is inter- and transdisciplinary competence building among young professionals in urban planning and design to develop their capacities a) to address principles of human settlements, b) to engage in new and shared knowledge production and c) to develop an improved practice contributing to upgrading existing cities as well as to Sustainable Urban Transitions.

The program advocates an integrated triple approach:

1. Urban Planning & Design: Area-based reality studies.
2. Urban Structures: System-based studies.
3. Urban Futures: Integration and scenario thinking.

All three modes include theory reviews, appraisal of methods and field studies.

The program will mostly use selected existing courses but a new course on Sustainable Urban Transitions will give a comprehension of the diversity of urban situations and challenges, and of the theoretical and methodological challenges linked to a new paradigmatic base of Sustainable Urban Transitions.

## **B.3 Contribution of each partner**

### **B.3.1 Contribution of each partner**

#### **Contribution**

Chalmers Architecture has a long history of research and education excellence in design and systems approaches to the field of sustainable urban development. A key issue in education has been reality-based learning, i.e. where students deal with real problems through interaction with real stakeholders of diverse kinds. This manifests itself in the growing research by design component at the department, and more recently through the heavy engagement in the successful application for a Mistra funded center of excellence in sustainable Urban Futures, where several of the staff is currently engaged during the start up phase of the center. The department currently runs an international master program called Design for Sustainable Development, where architecture, landscape architecture, planning, design and engineering students collaborate in crossdisciplinary projects addressing the complexity inherent in many sustainable urban development issues. For the proposed Nordic master program, Chalmers will contribute specifically in two areas: a) Sustainable Urban Development and the Design Professions; b) Reality based design studios

Aalto's Dept. of Architecture has a focus in both research and education strategy on sustainability, and particularly its social and cultural dimensions, addressed through the concept of the human-centered environment. This is one of the interdisciplinary themes of Aalto University and also of the new School of Architecture, Art and Design (AAD). The special interests of the department are related to a culturally sensitive and socially and environmentally responsible development of the architecture, landscape architecture and planning professions. The ability to use innovative technology and the understanding of economic and political forces behind urban and regional development, as well as the holistic management of design and planning in all scales are the unique strengths of Aalto University and AAD. The department has carried out international research in ecological city planning, participation and communication, power and expertise in planning, urban design management, learning processes in urban design and planning, and green structure and pedestrian spaces. The research combines design and planning practice with humanities and social sciences. Research is always integrated with education, and the students work with projects that represent real challenges, often together with planning practitioners.

DTU primary profile in relation to the program is the strategic planning and management of the urban built environment towards sustainable development, especially the transition of the technical urban infrastructure and the interaction between infrastructure, buildings and their users. Special attention is paid to transition towards a low-carbon built environment and mitigation of climate change effects on an urban level. Another focal point is developing business models for sustainable building.

KTH: To provide students with a thorough understanding of the planning process and the social, economic and environmental determinants that contribute to sustainable urban development. KTH's educational efforts have the objective to develop knowledge and skills for analyzing, synthesizing and coordinating complex planning tasks in an urban setting. By merging different disciplinary backgrounds into the education, graduates acquire a comprehensive understanding of urban planning, the challenges of social, economic and environmental change, and how professionals with different expertise can contribute to the development of sustainable districts, cities and regions.

NTNU: Department of Urban Design and Planning, will contribute with competence in dealing with equity, environmental sustainability and building of civil society and governance in urban upgrading and planning. Their current international, and research based, master program in Urban Ecological Planning focuses on local areas, housing and prime infrastructure, livelihood and stakeholder based issues. There is also a continuous search for integrated solutions based on a territorial resource base and strategic higher level relations. In the proposed Sustainable Urban Transition program, NTNU sees an opportunity to explore the interface between area based Urban Ecological Planning and strategic, sectoral Urban



Environmental Management within the search for alternative scenarios. In the Nordic context, there is a need to address the multicultural city and its potentials. The department has established a focal area in integrated land-use and transport planning which is appropriate for addressing the Nordic planning reality. Internationally, urban risk reduction and disaster mitigation plus reconstruction are areas of competence and concern.

### **B.3.2 Application and admission procedures**

#### **Application and admission**

The five universities are working together in Nordic 5 Tech ([www.nordicfivetechnology.org](http://www.nordicfivetechnology.org)), an association which, among other things, continuously develops experience in handling joint master programs. In particular, the administrative and organizational framework is being standardized. Administrative and legal support is made available throughout the development period and also to handle issues concerning application, admission and national legal frameworks.

The point of departure is that there will be a single application and admission procedure managed by Chalmers, where Chalmers handles both Nordic and international students. However, this needs to be confirmed in relation to the regulation at the partner universities, e.g. in terms of how admission procedures need to correspond to the degrees to be offered by the program (national, double or joint degrees, see below). For formal reasons, it may be necessary to run parallel admission procedures by the partners, where each university communicates admission to "their" students.

Regardless of whether there will be single or multiple admission procedures, screening criteria for selection of students will be developed and implemented jointly by the partner universities. A joint admission board with representatives from all partners will carry out the actual selection of qualified students.

### **B.3.3 Joint study programmes and relation to national legislation**

#### **Study programmes and relations**

The program aim is to issue double degrees. However, during the development period, it will also be explored whether a joint degree scheme may be more appropriate, or if national legislation imposes that national degrees need to be issued by some or all partners. As discussed above, the development period will also be used to discuss in depth what program design (e.g. 1+1 year or 1+1+1+1 semesters) is optimal, and how they link to the issue of national, double and joint degrees.

Another challenge is how specific requirements can be met, e.g. in terms of addressing EU qualification directives for architects and engineers.

### **B.3.4 PhD requirement**

#### **PhD requirement**

The theme of Sustainable Urban Transitions is at the core of ongoing research activities at the different universities, e.g. through the Mistra Urban Futures center of excellence in Gothenburg. It is therefore without much effort to offer possibilities to pursue a third cycle for motivated and capable students, although funding needs to be resolved according to the respective national procedures. A Nordic master program in Sustainable Urban Transitions would also provide an excellent foundation to develop a joint research school.

### **B.3.5 Number of ECTS (Study credits)**

#### **Number of ECTS**

The whole master program will encompass 120 ECTS, where the minimum contribution of each partner will be 30 ECTS (i.e. one semester) and the maximum contribution 90 ECTS (i.e. two semesters + master thesis), depending on what program design is ultimately chosen.

### **B. 3.6 Language**

#### **Language**

English only

## **B.4 Nordic added value**

### **B.4.1 Academic quality**

#### **Academic quality**

As argued above, urban development and planning processes are highly complex and laden with uncertainties and there are immense needs for integrated knowledge development and capacity building among involved professionals. Currently, a number of parallel efforts in both research and education for sustainable urban development is taking place at the partner universities, each one with a particular focus and excellence. Although these activities sometimes are overlapping, the complementarity of these efforts contains a huge potential for better supporting higher education in sustainable urban development. The five partner universities will, by joining their competencies, offer one of the most comprehensive master programs in sustainable urban development. As the partaking universities provide the master program with their specific foci and excellence, students will be offered a unique opportunity develop a more diverse set of skills than is normally the case at each individual university.

Moreover, as the students may develop their study plan by choosing among what is offered by the different partners, they may tailor the content of the master degree to what is optimal e.g. in regard to their intended context of professional practice or professional profile. This is particularly important since we target international students, where local/national adaptation of professional profiles is critical.

### **B.4.2 Contribution to excellence and competitiveness**

#### **Contribution**

The process of developing a joint curricula will in itself increase the awareness at each partner university regarding their strengths and weaknesses, providing an opportunity for working more systematically with quality management. Moreover, teacher exchange (both whole semesters and shorter interactions) will provide staff with excellent learning opportunities, both as visitors and as hosts. A summer school will also be run in collaboration with all partners. Finally, as students will move between the universities, they will bring with them both experiences and expectations that will trigger responses wherever they take part in learning activities.

## **B.5 Quality assurance**

### **B.5.1 Measures to assure the quality of the master programme**

#### **Measures to assure the quality of the master programme**

For the examination of master theses, critique will be carried out by opponents from partner universities to ensure a high and common quality level. The examination will be carried out jointly by at least two partners. External reviewers will be invited to assess the program annually. Curricula and course programs will be revised annually jointly by the partaking universities. Continuous quality and content development will be secured through initiation of a joint working group for excellence in higher education for Sustainable Urban Transitions.

### **B.5.2 Connection to research**

#### **Connection to research**

See also B.3.4 above. Master courses will be given in subject areas where each partner university has research excellence. Studio environments will be created where master students, master thesis research/writing, PhD students, researchers and practitioners work in co-production of knowledge in common topic areas.

### **B.5.3 Evaluation of the master programme**

#### **Evaluation of the master programme**

External reviewers will be invited to assess the program annually. See also B.5.1 above.

## **B.6 Innovation**

### **B.6.1 Innovative aspects regarding the content of the master programme**

#### **Regarding content**

The program will adopt a truly sociotechnical and transdisciplinary approach to education for Sustainable Urban Transitions. "Sociotechnical" implies that systems thinking is used to link the technical issues

traditionally taught at technical universities with the social sciences. Moreover, as some of the partners are from departments of Architecture and Design, arts and design will also be present in the program. "Transdisciplinarity" means that the courses are taking place IN reality, not just studying reality, i.e. a) that area-based field studies are seamlessly linked to theoretical and methodological issues, and b) that the societal context outside of academia plays an active role in higher education and its interlinked knowledge production. This sociotechnical transdisciplinary approach is novel when implemented throughout a whole master program and ensures high relevance and value of the learning taking place.

## **B.6.2 Innovative aspects regarding the teaching methods of the master programme**

### **Regarding teaching methods**

The sociotechnical transdisciplinary approach to Sustainable Urban Transitions has significant implications for teaching and learning. It is based on a Triple Helix approach (university+industry+government), meaning that education activities take place in close collaboration with both researchers and active practitioners. Most courses are problem-based and project-based, thus being located in the overlap of research, innovation and education. The studio environments described above will facilitate a setting where area-based field work takes place in parallel to (and integrated with) frontier research activities in relation to Sustainable Urban Transitions.

## **B.7 Dissemination**

### **B.7.1.Examples of good practice**

#### **Good practice**

As the program is oriented towards developing professional modes of working, reality research, and process thinking - i.e. not towards providing fixed answers to current problems - it will deliver students with excellent capacities to deal with complex, shifting and uncertainty-laden urban challenges - both today and in the future. Moreover, the integration of research, innovation and education will prepare students for a professional life at the intersection of knowledge-based societies and urban development processes. Such students will be highly attractive in Nordic countries as well as worldwide.

### **B.7.2 Dissemination and exploitation of results**

#### **Dissemination and exploitation of results**

As master courses run in close collaboration with disciplinary and transdisciplinary research, findings and results will be integrated into the larger picture of Triple Helix collaboration, where partners directly take part of students' achievements. Exhibitions and web-presentations will take place both locally in municipalities and globally, e.g. at World Urban Forums or World Expos. Moreover, experiences from the master program will potentially influence activities (in both education and research) at the partner universities as well as in their larger academic networks.

## **B.8 Target groups and recruitment of students**

### **B.8.1 Target groups and marketing within the Nordic region**

#### **Within the Nordic region**

The target group in the Nordic region is the top 10% students within the urban development and planning segment. The consortium will, with support from the individual universities, act as one single platform in all Nordic countries, where the actual marketing strategies will be further developed in the preparation phase.

### **B.8.2 Target groups and marketing outside the Nordic region**

#### **Outside the Nordic region**

The program aims to attract students with the highest ambitions regarding how to manage the complex challenges of Sustainable Urban Transitions. This would also include active professionals, e.g. aiming to add a second master degree to their CV. The partners will use their existing international networks to market and recruit students. Three of the participating universities (Chalmers, Aalto and NTNU) are UN HABITAT Partner Universities, thereby being part of a worldwide network of top universities. Chalmers is part of Alliance for Global Sustainability (with ETH Zurich, MIT and Tokyo) as well as involved in the Mistra Urban Futures center of excellence (linking to Salford, Tongji, Maseno, Bondo and Cape Town universities).



## **B.9 Sustainability**

### **B.9.1 Sustainability of the master programme**

#### **Sustainability**

The program will be fully integrated in the educational structure of all five partner universities as it will use courses developed in other programs. Each university already has a broad offer of master programs and the structures in place will ensure that the courses in the master program in Sustainable Urban Transitions, designed and developed in line with this application, will fit well into the regular framework for advanced education. The profile and content of the program has a strong attraction amongst students at the five universities involved, as well as internationally. This demand will be an important factor for the future of the program. Moreover, the universities involved will continuously monitor the development in the field to ensure the program continues to attract large numbers of good students.

### **B.9.2 Financing**

#### **Financing**

The program will be implemented totally under the regular implementation processes of each university. A Nordic 5 Tech administrative support group ensures that challenges due to different structures, rules and traditions lead to pragmatic solutions. Financing the implementation will therefore be taken care of in the individual institutions' implementation plans for education and financed through regular structures. The running courses constituting the program will be financed through the mechanisms allocating available funds to the departments. Launching the master program in Sustainable Urban Transitions will be done as a part of planning the whole educational offer and will thus be ensured space within the total educational budget of the universities.

From September 2011, three of the five partner institutions will start charging tuition fees from international students (i.e. students from countries outside the EEA). During the preparation phase, the consortium will investigate how this can be coherently managed, e.g. by students paying directly to the involved institutions according to their mobility track or by introducing a common consortium fee, where the latter appears more attractive to the consortium.

Possibilities to apply for additional funding, e.g. for mobility, will be explored, e.g. in relation to the Nordplus program.

## **C - Development period of the master programme**

### **C.1 Description of the development period**

#### **C.1.1 Goals and achievements during the development period**

##### **Goals and achievements**

Identify all relevant course modules at the partner universities. Subsequently, develop a joint curriculum using these courses as point of departure. Here, the courses chosen from each partner should a) reflect their excellence in terms of Sustainable Urban Transitions and b) deliver content that is coherent with the overall profile of the program.

The curriculum will also include a summer school, jointly given by the partners. The summer school will be developed and given in a pilot format during the summer 2012.

Identify needs for further development of curriculum and courses; implement improvement where needed. One such course development is already identified: an introductory course in Sustainable Urban Transitions where the ethos of the program will be established among the students.

Identify and engage key persons among the university staff. Develop joint capacity in the area of urban transitions through running a higher seminar during 2010-2011.

Develop forms for collaboration and inter-institutional learning. This include setting up a number of work formats, i.e. Coordination Unit, Core Team and Working Groups. A key issue will be to develop forms for collaboration that suits the respective formats.

Develop organization and leadership. Secure that chosen organisational structures fits the respective partners' formal and informal requirements and needs.

Resolve all legal and formal issues, e.g. application (application system, verifying students' qualifications), admission (screening, ranking), degrees (national, double or joint degrees), funding (including tuition fees), scholarships.

Develop forms for evaluation and quality management. This includes setting up a system for external reviews, as well as how such appraisal can be iterated into the activities of continuous course development.

Develop the brand Sustainable Urban Transitions and set marketing activities in motion.

### **C.1.2 Main activities during the development period**

#### **Main activities**

The main vehicles for the development of the master program are the Coordination Unit (5 participants, i.e. one from each university), the Core Team (10-15 participants, 2-3 from each university) and the Working Groups (5-7 participants in each, distributed among partners).

#### **Activities:**

Set up a Coordination Unit responsible for day-to-day planning, coordination, follow-up and evaluation of progress made.

Set up a Core Team that will deal with strategic matters, as well as overall issues, such as establishing curriculum, defining leadership, setting up organization, overall quality management, etc. The Core Team will also be supported by external resource persons to provide an outside perspective and appraisal.

Initiate a number of Working Groups that will be responsible for the operationalization of the master program as follows:

WG1: Course and curriculum development and integration, including summer school

WG2: Internal capacity development, teacher mobility, joint course work, seminars

WG3: Organization and leadership

WG4: Formalities, admission procedures, degrees

WG5: Financing and sustainability of the program

WG6: Evaluation and quality management

WG7: Visibility, marketing and scholarships

Launch a series of Core Team seminars to discuss overall issues, such as curriculum, leadership, organization, team building of Core Group, and subsequently of the larger group of involved academic and administrative staff. Four Core Team Seminars are planned to take place.

Launch a Higher Seminar in Sustainable Urban Transitions, to support capacity building and coherence among involved teaching and research staff. Four Higher Seminars are planned to take place.

Initiate pilot collaboration in courses and teacher exchange throughout the preparation phase.

Plan and implement the Pilot Summer School in summer 2012, to finetune philosophy and modes of working.

Start up marketing and visibility activities.

Set up the joint screening group and implement admission procedures.

### **C.1.3 Institutional and national anchorage**

#### **Institutional and national anchorage**

70-80% of the global population will live in cities in the near future and it is in cities that many of our future challenges in terms of sustainable development need to be met and addressed. The theme of sustainable urban development is thus growing into an increasingly central area of research and education at all the involved universities.

Nordic collaboration is actively promoted by the involved universities, not least as a vehicle to take on the growing global competition in the field of higher education. In Sweden, collaboration between Chalmers and KTH is in line with national aspirations for strengthening research and education capacity by joining forces.

Through the cooperation in Nordic 5 Tech there is a strong commitment from the highest level in each institution for joint initiatives. Rectors meet regularly, endorse new initiatives, follow their development and assess the effects. This ensures a sound balance between sustaining excellence and ensuring that the programs are fully integrated in each institution's educational structure.

At Chalmers, this application for a Nordic Master Program was initiated by the President (Rector). The program is supported by the Nordic Five Tech University alliance and the initiative to establish a Nordic master program in Sustainable Urban Transitions was endorsed by the rectors of Nordic Five Tech at the rectors' meeting in August 2010.

All five universities are thus highly committed to this application, both at the highest level of administration (i.e. Rector) and by the respective Heads of the departments directly involved in the application.

### **C.1.4 Monitoring and evaluation during the development period**

#### **Monitoring and evaluation**

The Coordination Unit, with support from the Core Team, will have the overall responsibility for monitoring and evaluating progress during the development period. Criteria for evaluation will be developed by the Core Team. The Working Groups will report activities bi-monthly to the Coordination Unit, which may follow up on arising issues. Approximately every six months, the Core team will convene to assess overall progress and take action where needed.

The Nordic 5 Tech association's administrative support group will also provide support in terms of both institutional anchorage and monitoring/evaluation activities.

## **C.2 Partnership**

### **C.2.1 Previous collaboration**

#### **Previous collaboration**

There has been a long term cooperation with the partners within the framework of Nordic Forum in Development Studies at Schools of Architecture (NOFUA) since the 1980s. This is remarkable because it has been one of few regular meeting places with annual conferences between the Nordic schools of architecture, with course and research presentations by students and faculty. The last conference was at KTH (Stockholm). Earlier conferences have been at other N5T partners in Gothenburg, Helsinki and Trondheim, as well as at other Schools of Architecture in Copenhagen, Aarhus, Oslo and Bergen. The NOFUA Conference at Trondheim in 1999 was made possible by generous grant by the Nordic Council of Ministers.

Professor Björn Malbert (Chalmers) took an appreciable initiative to present his ideas for a Nordic Five Tech joint master course on Sustainable Urban Transitions in Trondheim 2nd of September. This and earlier close interaction this summer has been of importance for articulation of ideas and arriving at possible synergies e.g. with the international master programs of Urban Ecological Planning and Physical Planning at Department of Urban Design and Planning at NTNU.

In Trondheim there is a process of assessing the possibilities for a five year master study in Physical Planning, and there was recently a Nordic meeting where the Nordic Five Tech partner KTH presented their comprehensive master program in planning. This initiative to create a five year master program is strongly supported by the Norwegian Ministry of Environment. A Nordic Five Tech master degree in Sustainable Urban Transitions has the potential to be a master level stream associated with this initiative, and will contribute to competence building through research based master degrees addressing Nordic and international planning realities, issues and progress.

Chalmers and NTNU have also collaborated through joint course work in Sustainable Building. Chalmers, Aalto and NTNU have also been collaborating in the development of the concept of UN HABITAT Partner Universities, where master education has been a key component in the discussions. This collaboration has included a series of meetings as well as the chairing of a round table at the World Urban Forum in Nanjing, China.

During recent years, there have been a number of professional meetings between people from Chalmers and DTU concerning the subject of sustainable urban development, e.g. in terms of research seminars and PHD education. There has been no systematic exchange of students, but DTU students have been finishing their studies at Chalmers and KTH.

TKK/Aalto has been involved in research collaboration, particularly the EU 5th Framework project Grenstructure and Urban Planning (GREENSCOM), together with Chalmers. There has also been exchange of expertise in doctoral education on various occasions with KTH and Chalmers.

### C.2.2 Division of work between the partners

#### Division of work between the partners

The main vehicles for the development of the master program are the Coordination Unit (5 participants, i.e. one from each university), the Core Team (10-15 participants, 2-3 from each university) and the Working Groups (5-7 participants in each, distributed among partners).

The Working Groups will consist of participants from two or three partner universities (distribution indicated below but may be subject to modification), and will be responsible for the operationalization of the master program as follows:

WG1: Course and curriculum development and integration, including summer school (Chalmers, NTNU, Aalto)

WG2: Internal capacity development, teacher mobility, joint course work, seminars (Aalto, KTH)

WG3: Organization and leadership (Chalmers, NTNU)

WG4: Formalities, admission procedures, degrees (Aalto, KTH)

WG5: Financing and sustainability of the program (NTNU, DTU)

WG6: Evaluation and quality management (DTU, Chalmers)

WG7: Visibility, marketing and scholarships (KTH, DTU)

### C.2.13 Division of funds

#### Division of funds

The general principle is that both the responsibilities and the funds will be equally distributed among the consortium partners. Each university is active in Coordination Unit, Core Team and three Working Groups. As coordinator, Chalmers will take on additional responsibilities, e.g. as regards initiation of the different activities, chairing Core Team and Coordination Unit, as well as being main responsible for internal evaluation. Expressed in monetary terms, out of the available 1,000,000 DKK, each university (including Chalmers) receives approximately 179'. Chalmers will spend an additional 64' on project coordination. There is also 42' available for costs related to meetings and seminars.

C.3 Work programme					
	Activity	Start year	Start date	End year	End date
1	Coordination Unit, CU meetings	2010	October	2012	October
2	Core Team, CT seminars	2010	October	2012	October

3	Working Group 1, WG1 meetings	2010	November	2011	December
4	Working Group 2, WG2 meetings	2010	November	2012	August
5	Working Group 3, WG3 meetings	2010	November	2011	May
6	Working Group 4, WG4 meetings	2010	November	2011	December
7	Working Group 5, WG5 meetings	2010	November	2011	December
8	Working Group 6, WG6 meetings	2010	November	2012	April
9	Working Group 7, WG7 meetings	2010	November	2012	April
10	Team building activities	2010	November	2012	August
11	Pilot collaboration in courses; teacher exchange	2011	September	2012	August
12	Summer school			2012	August
13	Marketing and visibility	2011	August	2012	April
14	Consortium agreement			2011	May
15	Curriculum			2011	December
16	Interim report			2011	June
17	Website			2011	September
18	Application deadline for students			2012	April
19	Start of courses			2012	September
20	Final report			2012	October
21	Higher seminar in Sustainable Urban Futures	2011	January	2012	May



## C.4 Budget

### C.4.1 Budget

	2010 (DKK)	2011 (DKK)	2012 (DKK)	Sum
<b>Development of study programmes/courses</b>				
Salaries / fees /employers' fees / general expenses	143 800	359 500	215 700	719 000
Travels	35 000	87 500	52 500	175 000
Costs for seminars, workshops, etc	8 400	21 000	12 600	42 000
Purchase of products and services	0	0	0	0
<b>SUM - Development of study programmes/courses</b>	<b>187 200</b>	<b>468 000</b>	<b>280 800</b>	<b>936 000</b>
<b>Dissemination</b>				
Dissemination of results, including printing costs	0	0	0	0
<b>SUM - Dissemination</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Project management</b>				
Salaries, coordinating institution	8 000	20 000	12 000	40 000
Evaluation	3 200	8 000	4 800	16 000
Other costs	1 600	4 000	2 400	8 000
<b>SUM - Project management</b>	<b>12 800</b>	<b>32 000</b>	<b>19 200</b>	<b>64 000</b>
<b>SUM - Total</b>	<b>200 000</b>	<b>500 000</b>	<b>300 000</b>	<b>1 000 000</b>

### Comments to the budget

### C.4.2 Detailed financial plan

	Title	2010 (DKK)	2011 (DKK)	2012 (DKK)	Sum
1	Chalmers Coordination - salaries	8000	20000	12000	40000
2	Chalmers Coordination - evaluation	5600	8000	2400	16000
3	Chalmers Coordination - other costs/unfouseens	1600	4000	2400	8000
4	Coordination unit - salaries	19200	48000	28800	96000
5	Coordination unit - travel	5000	12500	7500	25000
6	Core Team - salaries	57600	144000	86400	288000
7	Core Team - travel	10000	25000	15000	50000
8	Core Team Seminars - costs	1000	2500	1500	5000
9	Higher Seminar in Sust. Urban Transitions - travel & costs	6000	15000	9000	30000
10	WG1: Course and curriculum development etc - salaries	5000	12500	7500	25000
11	WG2: Internal capacity development etc - salaries	5000	12500	7500	25000
12	WG3: Organization and leadership - salaries	5000	12500	7500	25000
13	WG4: Formalities, admission procedures, degrees - salaries	5000	12500	7500	25000
14	WG5: Financing and sustainability of the program - salaries	5000	12500	7500	25000

15	WG6: Evaluation and quality management - salaries	5000	12500	7500	25000
16	WG7: Visibility, marketing and scholarships - salaries	5000	12500	7500	25000
17	Pilot collaboration in courses and teacher exchange - travel	5000	12500	7500	25000
18	Pilot Summer School, 2012 - salaries, travel & costs	19400	48500	29100	97000
19	External resource persons - salaries, travel & costs	25000	62500	37500	125000
20	Start up marketing and visibility activities - costs	4000	10000	6000	20000

**Comments to the financial plan**





## Consortium Agreement

Between

Aalto University, Finland,  
Chalmers tekniska högskola (Chalmers University of Technology), Sweden,  
Kungliga tekniska högskolan (Royal Institute of Technology), Sweden  
Norwegian University of Science and Technology, Norway,  
Technical University of Denmark, Denmark,

Concerning

The Nordic Master Programme in Sustainable Urban Transitions (NMP-SUT)

### Preamble

This Agreement has been concluded by and between Aalto University (hereafter Aalto), Chalmers tekniska högskola (Chalmers University of Technology), Sweden (hereafter Chalmers), Kungliga tekniska högskolan, Sweden (hereafter KTH), Norwegian University of Science and Technology, Norway (hereafter NTNU) and the Technical University of Denmark, Denmark (hereafter DTU), hereafter referred to as the Consortium.

The Consortium partners are all founding members of the Nordic Five Tech university alliance (N5T). It is a strategic goal of the alliance to become the Nordic check point for international MArch, MSc and MEng students and to create synergy between existing study offers in order to provide high class study programmes with an added N5T value to N5T as well as international students. The NMP-SUT materializes this goal.

The faculties/departments responsible for implementing the NMP-SUT programme are: the Department of Architecture at Aalto; the Department of Architecture at Chalmers; the Department of Management Engineering at DTU; the Department of Urban Planning and Environment at KTH; and the Faculty of Architecture and Fine Arts at NTNU.

#### **Article 1. Purpose and scope of the agreement**

The purpose of this agreement is to outline the principles and terms of implementing the NMP-SUT by the Consortium. The programme has received the Nordic Master Programme acknowledgement from the Nordic Council of Ministers in 2010.

This Agreement has to be implemented within the legal requirements of each participating institution. The provisions of this agreement shall not be construed so as to diminish the fully autonomous position of any one university.

#### **Article 2. Structure and Organisation of the Cooperation**

The NMP-SUT is coordinated by Chalmers. The implementation of the programme is overseen by a joint Programme Board, with two representatives from each institution, one professor and one administrative representative<sup>1</sup>. The Programme Board is chaired by the programme coordinator. The Programme Board can invite representatives of the Consortium universities who are not members of the Board to participate in individual tasks and projects. The Programme Board shall be responsible for ensuring that the teaching offered in the framework of the NMP-SUT is delivered of the highest academic standards. Any considerable changes implemented to the courses and modules of the NMP-SUT programme must be submitted to the Programme Board for approval. The Programme Board will meet at least once a year.

#### **Article 3. Financing of the Programme**

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<sup>1</sup> Representatives are listed in annex 1

The development of the programme is supported financially by the Nordic Council of Ministers. Each university covers its own expenses related to the teaching and administration of the Programme. Co-financing might be foreseen for some activities.

#### Article 4. Purpose of the Programme

The Nordic Master is a two-year Master's degree programme (120 ECTS) in Sustainable Urban Transitions offered jointly by the Consortium. The NMP-SUT is based on the particular expertise of the participating faculties/departments within sustainable urban development and urban transitions:

- **Aalto** – Human-oriented living environments etc etc
- **Chalmers** – Local socio-spatial dynamics and citizen involvement in sustainable urban and neighbourhood transitions
- **DTU** - Planning, innovation and management of the built environment – in a socio-technical perspective
- **KTH** – Governance, intercity
- **NTNU** – Towards sustainable livelihoods, land use and urban infrastructure through formal and informal planning processes at local and city levels

**Merknad [JHK1]:** Each partner to contribute with defining their expertise!!  
Deadline May 27

The aim of the NMP-SUT is to:

- Provide opportunities for joint learning and understanding of urban planning, design and management as highly complex transition processes, laden with both short-term and long-term uncertainties.
- Support integrated learning and capacity building targeting the variety of involved professionals.
- Show how sociotechnical systems theory, participative and scenario approaches, area-based planning and practice-based research are key concepts in sustainable urban transitions.
- Provide opportunities for learning in different contexts and fields of application at the five participating universities, exploiting the strong complementary specialties of the N5T partners to foster highly qualified candidates for public administration, industry and research within sustainable urban transitions.

### **Target group**

The NMP-SUT targets international students wishing to profit from the N5T universities' long standing tradition and competence in the field and N5T students wishing to specialize in a specific area of expertise offered within the alliance. The programme is open to students with a background in Architecture, Landscape Architecture, Planning (such as Physical Planning and Human Geography with a profile in planning), and Engineering. Depending on their background (bachelor degree and professional experiences), however, students can only apply to certain study tracks and, hence, to certain universities (see Figure 1).

### **Article 5. Programme Structure**

The NMP-SUT is structured as a **double Master's degree programme**, where students study one year/two semesters in two different institutions.

The length of the study period in each university corresponds to 60 ECTS. In order for the consortium members to issue a MArch, MSc or MEng diploma, the following regulations apply:

- Students graduating from Aalto, Chalmers, DTU, KTH and NTNU must have obtained a minimum of 60 ECTS credits at the institution, including the Master's thesis.
- The Master's thesis must have a main supervisor from the graduating institution and a co-supervisor from the other institution. The Programme Board and the supervisors in particular should agree on the principles for the evaluation of the thesis in each case.
- The NMP-SUT does **not** offer the possibility to graduate from two institutions within the same country.

### **Definition: institution 1 and institution 2**

Institution 1 (year one university) is where the student is admitted and spends the first two semesters. Institution 2 (year two university) is where the student spends the following two semesters and conducts her/his Master's thesis.

Depending on the courses on offer, some universities may not be able to deliver the courses needed to function as institution 1 or institution 2. Possible combinations and recommended study tracks must be clearly described in the admission material.

### **Language**

The language of the programme is English.

### **Article 6. Master's thesis**

The topic of the Master's thesis must be agreed upon jointly by the two degree awarding universities that are part of the students study plan. The Programme Board will delegate the approval decision to the year two university involved. The two universities will provide co-supervision for the thesis. The university where the student conducts the thesis work will act formally as the main supervisor. In cases where there is no compulsory thesis defence, a joint thesis presentation will be organised with the presence of both supervisors and the necessary examiners.

Student guidelines for thesis work and guidelines for co-supervision will be elaborated as well as a topic of thesis agreement form.

### **Article 7. Contents of the Programme**

The NMP-SNT follows a Year one university/Year two university pattern:

1. Year one university, 1<sup>st</sup> and 2<sup>nd</sup> semesters
2. Year two university, 3<sup>rd</sup> and thesis semesters

The thesis shall be a synthesis of the competencies gained in the previous three semesters.

The program is structured in five study tracks. The content and structure of these study tracks may be revised as the program is implemented and developed. To ensure progression and complementarity in the study structure and that graduates obtain a well defined competence profile, one consortium member will act as lead institution for each track. The study tracks are (responsible institution in brackets; \* signifies study track given every other year):

- **Area-based urban transitions (Chalmers)**  
This approach involves careful study and consideration of *local* circumstances, predispositions and capacities to address local and global challenges. The student will develop a systemic design competence through repeated training in very different situations and contexts. This includes a generic competence to analyze different local situations in their broader contexts and to synthesize these findings into relevant and effective strategies and solutions for sustainable urban transitions.
- **Human-oriented urban transitions (Aalto)**  
Here, the starting point and perspective is the human being and her relationship with the physical and socio-cultural environment. A deep understanding of the relevant human and social sciences is blended with a practical approach to sustainable transitions. The student will develop a critical ability and attitude combined with high ethical standards in terms of urban justice, equal opportunities and environmental protection.
- **Urban Ecology (NTNU)\***  
This study track addresses the interface of equity, environmental sustainability and civil society in urban interventions in local urban contexts in developing countries and Nordic countries. The student will learn how to address non-planned neighbourhoods in urban centres and fringe areas as well as gain knowledge of integrated and local action planning processes building both on local defined priorities and local ownership and higher levels strategic action.
- **Transitions of urban (intra)structures (NTNU)\***  
A great challenge is to design urban structures in a way that reduces cities' ecological footprints. This study track deals with long-term urban change in the context of carbon-neutral cities. The student will engage in integrated planning processes where land use, public transport, car traffic and infrastructure are seen together in relation to urban design, urban density and location of transport nodes.
- **Urban regional transitions (KTH)**  
In this track, urban regional interactions will be addressed as a means for urban development at the local and regional level. Students will develop a deeper understanding of strategies for creating competitive sustainable urban regions,



including issues such as institutional context, political commitment, supranational policies, service provision, labour markets, relations with other regions, as well as cultural, environmental and social determinants – all of which define the context for governance and coordinated action.

In these study tracks there are different options for architecture, landscape architecture, planning (physical planning, human geography) and engineering students regarding 1<sup>st</sup> and 2<sup>nd</sup> year universities (see Figure 1):

*For students with a Bachelor in Architecture:*

Human oriented urban transitions

Aalto -> Chalmers

Area based urban transitions

Chalmers -> Aalto

Urban ecology (every 2<sup>nd</sup> year)

NTNU -> Aalto

Transitions of urban (infra) structures (every 2<sup>nd</sup> year)

NTNU -> KTH

Urban regional transitions

KTH -> Aalto

*For students with a Bachelor in Landscape Architecture or Planning:*

Area based urban transitions

Chalmers -> NTNU

Urban ecology (every 2<sup>nd</sup> year)

NTNU -> Chalmers

Transitions of urban (infra)structures (every 2<sup>nd</sup> year)

NTNU -> KTH



For students with a Bachelor in Engineering:

Area based urban transitions

Chalmers → NTNU

Urban Ecology (every 2<sup>nd</sup> year)

NTNU → Chalmers

Transitions of urban (infra)structures (every 2<sup>nd</sup> year)

NTNU → DTU

Urban regional transitions

KTH → DTU

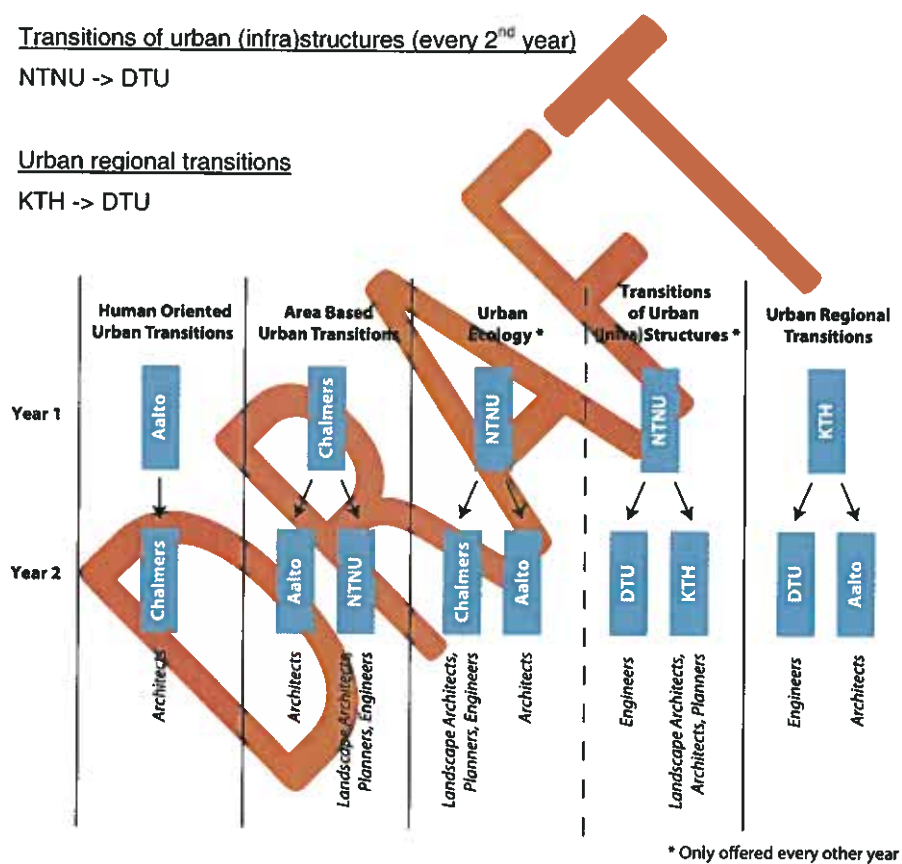


Figure 1. The five study tracks and how students with different background can pursue different tracks.

**Article 8. Degrees and Diplomas**

Students successfully completing the programme will be awarded a double Master's degree, one diploma from each of the two institutions where the student has studied. A Diploma Supplement and official transcript will be issued from both institutions.

The names of the degrees are:

Aalto: Master of Science in Architecture

Chalmers: Master of Science (120 credits)

DTU: Master of Science in Engineering (Engineering Management)

KTH: Master of Science (120 credits)

NTNU: Master of Architecture  
or Master of Physical Planning  
or Master of Science in Urban Ecological Planning

Merknad [JHK2]: Dag: Check if this is ok. Deadline May 27

Students who have met the requirements of the joint NMP-SUT will also receive a Diploma Supplement and a Nordic Five Tech document describing the Consortium and the NMP-SUT. For NTNU, the contents of the insert will be printed on the backside of the diploma.

Merknad [JHK3]: Dag: Check if this is ok. Deadline May 27

#### Article 9. Student admission

The annual intake of the NMP-SUT programme is estimated to 30 students. The Consortium aims to equally share the students among the Consortium members. However, in the initial stage DTU will only accommodate 2<sup>nd</sup> year students.

There is a limited and predefined number of student places in each study track and for each category of student (i.e. Architecture, Landscape Architecture, Planning, and Engineering). Students will apply to, and follow, a specific study track. Each university reserves the right to accept 5 to 10 students with study place guarantee.

The common admission requirements are:

- The degree required to enter the NMP-SUT must be equivalent to a Bachelor's degree, which includes 3 years/180 ECTS credits (full time studies) at a minimum. The program is open to students with such degrees in Architecture, Landscape Architecture, Planning (Physical Planning and Human Geography with a profile in planning), and Engineering. However, the different study tracks have different criteria for eligibility.
- Applicants may be enrolled in the last semester of their Bachelor's studies by the time they apply for admission to the NMP-SUT. This is to be considered as *Basic Eligibility* on the condition that they pass their Bachelor Degree.
- All applicants will be considered on an individual basis regarding their proficiency in the planning field.
- Students in Architecture and Landscape Architecture need to submit portfolios.
- All applicants should submit a letter of motivation.

**English language requirements:**

When applying for admission, applicants must provide evidence of academic achievements and proficiency in English. Certified photocopies of relevant documents must be enclosed with the application.

- TOEFL:  
Paper based: 580 (written section grade 4,5) Internet-based test: 92 (written section grade 22)
- IELTS:6.5, no section lower than 5.5 (only IELTS Academic Training accepted)

**English language test exemptions:**

1. Applicants who have completed a university degree instructed in English at a university that is physically located in one of the following countries: Australia, Canada, Ireland, New Zealand, UK and USA.
2. Applicants who have completed at least a 3-year degree instructed in English in an EU/EEA country.

**Ranking**

All applications are academically evaluated by the Consortium partner universities. Engineering and Planning students will be assessed only on their prior academic achievements (courses taken, credits and grades). Students in Architecture and Landscape Architecture will be assessed based on their portfolios and/or academic achievements. Motivation letters will be used to distinguish between students with equal academic achievements and portfolios. Admission is based on joint decision by the Admission Committee of the Consortium. Admission requirements will be evaluated annually.

### Admission process

The students apply **locally** through each of the five consortium member institutions. "Locally" means that students must apply for admission to **Institution 1**, where they will spend the first two semesters of the Master's programme. This means that students need to choose study track at the time of application, with a first and second choice.

There will be one deadline for the programme disregarding the local deadlines set by the individual member institutions. This deadline is 15 January.

Alternative text for the para above:

Students thus follow local deadlines at the respective Institution 1

Institutions will undertake a pre-screening by local admin staff based on common pre-screening criteria. Subsequently, local academic staff screens applications and shortlist eligible candidates. Finally, the Programme's Admission Committee meets and reviews all short listed candidates. For prospective NMP-SUT students, the decisions of the Admission Committee overrules local ranking of students. Admission procedures will be further specified in the admission protocol.

Students who have complaints regarding the admission must refer to the appeals policy and procedures of the institution where they applied.

When students apply they must indicate study track and hence the two universities from which they wish to graduate. They also need to submit a draft study plan in order for the NNP-SUT programme coordinator to assess the track and assign the relevant tutors.

**Merknad [JHK4]:** Is this deadline decided and set? By whom? And why?

**Merknad [JHK5]:** Since a local-deadline-approach seems the easiest to implement

Students may change the study plan during their first year of studies but no later than 15 January.

#### **Article 10. Rights and status of the students**

For semesters one and two all students are registered as degree seeking students at their selected institution no. 1. For semesters three and four students are registered as degree seeking students in institution no. 1 and 2.

Students will be subject to the regulations and procedures of the institution where they attend courses and sit for examinations in a given semester. Re-sits will take place according to the rules and regulations of the institution where the student attended the course. NMP-SUT students will be provided with the same academic resources and support services that are available to all students at that institution.

Courses/modules included in the student's NMP-SUT curriculum will be recognized fully and automatically by the two institutions issuing the double degree. Upon completion of the stay in each of the two institutions involved in the study plan, the university will provide the student with an official transcript of records necessary in order to provide credit transfer.

#### **Supervision and study plan**

All students will have two supervisors, one from each of the two institutions issuing the double Master's degree. The main supervisor will be from the institution where the student conducts his/her thesis work. Each one of the two universities involved is required to appoint a supervisor for each student.

#### **Article 11. Use of ECTS and grading system**

The Consortium universities will use the national grading scale for the assessment of course work and thesis. All universities use a credit system equal to the ECTS (European Credit Transfer System). The Programme Board will compile a scaling table/conversion table of all the grading systems used within the Consortium.

## Article 12. Tuition fees and Student Union fees

Tuition fees: Chalmers, DTU and KTH charge tuition fees to non-EU students.

Currently, NTNU and Aalto do not charge tuition fees from the NMP-SUT programme students.

The consortium as such will not charge a tuition fee. Fees will be paid directly to the two institutions involved in the students' study track (see articles 5 and 7). Member universities are committed to ensuring that no NMP-SUT students are faced with double charges.

**Merknad [JHK6]:** An asymmetric fee structure is potentially problematic and need to be resolved by the NST Education Committee

Chalmers charge tuition fees to non-EU/EEA and Switzerland students.

Exemptions: Students exempt from application and tuition fees:

- Residents of Sweden and citizens of EU/ EEA (and Switzerland) member nations are exempt from paying tuition fees.
- Students granted a permanent Swedish residency permit
- Students granted a temporary Swedish residency permit for reasons other than studies. (Having a temporary residency permit for studies in Sweden does not grant exemption from fee payments)
- Students attending as a part of an exchange agreement will not pay tuition fees.

DTU charge tuition fees to non-EU/EEA citizens. However, the following non-EU/EEA citizens are exempted from tuition fees:

- Students studying at DTU as exchange students according to agreements between DTU and one or more universities abroad.
- Students with a "*permanent residence permit*" or a "*time-limited residence permit issued with a possibility of permanent residence in Denmark, Finland, Iceland, Norway and Sweden*".
- Students who have dual citizenship in both an EU country and a non-EU country.



At NTNU, all students enrolled pay the semester fee.<sup>2</sup>

At Aalto, the student union membership fee (46 € in 2010-2011) is compulsory for degree seeking students.

At Chalmers, according to local regulations, all students are obliged to pay Student Union membership fee. Student Union membership fee are included in tuition fees (refers to students who are required to pay tuition fees)<sup>3</sup>.

Students will pay fees directly to the two institutions involved in their study track and fees will vary accordingly.

Merknad [JHK7]: Depends on the chosen fee structure...

### Co-supervision and tuition fees

In connection to co-supervision of thesis work the Consortium member institutions are committed to ensuring that fees are solely charged by the institution where the student is physically present and ensure that the students are not subject to double charges.

### Article 13. Rights and obligations of the parties

The Parties to this Agreement commit themselves to organizing and implementing the joint NMP-SUT programme for a period of five academic years starting from the academic year 2012-2013. The Parties to this Agreement shall individually and collectively, through their teaching and assessment, be responsible for the quality of the NMP-SUT programme and for the high standards of the degrees.

As Programme Coordinator for NMP-SUT, Chalmers will be responsible for:

- the general coordination of NMP-SUT and the managerial matters relating to the project, including the convening of Programme Board meetings,
- the financial management of the NMP-SUT project funding,
- the communication and reporting to programme sponsors,
- all communication to the partners on issues of general interest for the Consortium,

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<sup>2</sup> 430 NOK each semester in academic year 2009-2010. The fee goes to the Student Welfare Organization.

<sup>3</sup> Approximately 250 SEK each semester in academic year 2010-2011.

- keeping a register of NMP-SUT students,
- organizing the admission committee meeting and procedure.

All NMP-SUT consortium members will be responsible for:

- ensuring that the programme receives accreditation according to national standards,
- organizing teaching in the NMP-SUT programme according to the jointly approved curriculum and division of tasks,
- providing academic support, counselling and tutoring for all NMP-SUT students, ensuring that appropriate library and computer facilities are made available for students,
- sending appropriate representatives to Programme Board meetings,
- appointing one academic and one administrative representative to the Programme Board,
- performing continuous evaluation of the NMP-SUT programme according to the institutional quality assurance procedures,
- providing updated lists of enrolled students to the programme board and the coordinator.

**Merknad [JHK8]:** removed bullet on national language courses

The NMP-SUT Programme Board will be responsible for:

- overseeing the implementation of the programme,
- ensuring that the teaching offered in the framework of NMP-SUT programme is delivered to the highest academic standard,
- appointing an admission committee,
- planning and implementing specific joint NMP-SUT quality assurance activities, which will supplement the national and institutional quality work,
- seeking external funding for NMP-SUT,
- ensuring communication and cooperation between NMP-SUT and the appropriate local authorities responsible for the Master-level education and international administration,
- agreeing upon and ensure consensus on the structure of the NMP-SUT programme and on possible changes in the content of the programme, as well as on changes in the Consortium,

**Merknad [JHK9]:** with funding from where?

- evaluating the project co-ordination and propose changes with regards to the division of responsibilities,
- ensuring continuous development of NMP-SUT,
- ensuring consensus on student selection,
- evaluating the admission criteria,
- maintaining dialogue with major stakeholders and industry with regards to candidates' competence profiles, labour market needs and scholarship possibilities,
- defining a marketing strategy for the programme and contributing accordingly in marketing activities.

The admission committee will be responsible for:

- the selection of students

#### **Article 14. Quality assurance**

Quality assurance will be based both on the ongoing national and university level practices and policies and on specific NMP-SUT quality assurance activities agreed upon by the Consortium and implemented by the Programme Board.

In 2014, the programme will be evaluated as a whole based on the experience from the first student cohort. The evaluation will be financed by the Consortium.

**Merknad [JHK10]:** with funding from where?

#### **Article 16. Renewal, termination and amendments**

This Agreement will come into effect with the appropriate signatures of each university of the Consortium and it will be in force for a period of five years. Parties to this Agreement may withdraw from the Agreement, and consequently from the Consortium, by giving six months notice to the other parties in writing. In the case of such withdrawal, it is agreed that any student, who at the date of the withdrawal has been accepted for the NMP-SUT programme and has commenced studies at the institution withdrawing from the Consortium, may complete the NMP-SUT courses under the terms of this Agreement within 4 years from the time he/she was accepted into the Programme. The Agreement is renewable and may be amended by mutual written consent of all the Parties.

**Article 17. Conflict resolution**

The NMP-SUT programme board shall endeavour to jointly resolve any disputes arising from interpretation of this Agreement. Any disputes that cannot be solved by the Programme Board shall be subject to negotiations between the Presidents of the Consortium universities. If the Presidents are not able to reach a decision, the case will be submitted to the Swedish national court system.

This Agreement has been signed in five originals, of which each institution has taken one.

<b>Institution</b>	<b>Signature</b>	<b>Place and date</b>
<b>Aalto University</b> Prof. Tuula Teeri President	.....	.....
<b>Chalmers tekniska högskola</b> Prof. Karin Markides President and CEO	.....	.....
<b>Kungliga Tekniska högskolan</b> Prof. Peter Gudmundson President	.....	.....
<b>Norwegian University of Science and Technology</b> Torbjørn Digernes Rector	.....	.....

**Technical University of Denmark**

Lars Pallesen

President

.....

DRAFT

## Notat

Til:	Studieavdelingen
Kopi til:	Institutt for kreftforskning og molekylær medisin, Institutt for laboratorimedisin, barne- og kvinnesykdommer, Institutt for nevromedisin, Institutt for samfunnsmedisin, Institutt for sirkulasjon og bildediagnostikk
Fra:	Det medisinske fakultet

## Studieprogramportefølje 2012/2013 ved DMF - runde 2

Vi viser til notat fra prorektor av 21.06.11 vedrørende utvikling av studieprogramporteføljen for studieåret 2012/2013.

### Vedrørende studieretning i bevegelse og motorisk kontroll

I vårt foreløpige forslag til studieprogramportefølje (runde 1) meldte vi inn planer om en ny studieretning innenfor bevegelse og motorisk kontroll tilknyttet 2-årig master i klinisk helsevitenskap. I samråd med Institutt for bevegelsesvitenskap og SVT-fakultetet, er det imidlertid bestemt at denne studieretningen likevel ikke vil få oppstart i 2012/2013. Fagmiljøene ved de to fakultetene vil isteden bruke det neste året på å se hvordan man kan samarbeide for å lage et best mulig samlet studietilbudet innenfor bevegelse/motorisk kontroll ved NTNU.

### Ingen vesentlige porteføljeendringer i 2012/2013

Det planlegges ingen vesentlige endringer i studieprogramporteføljen ved DMF i kommende studieår.

### Samlet oversikt over DMFs planlagte studieprogramportefølje i studieåret 2012/2013:

- Profesjonsstudiet i medisin (CMED)
- 2-årig master i klinisk helsevitenskap (MKLIHEL)
  - Studieretning *anvendt klinisk forskning*
  - Studieretning *fedme og helse*
- 2-årig internasjonal master i molekylærmedisin (MSMOLMED)
- 2-årig internasjonal master i nevrovitenskap (MSNEUR)
- 2-årig internasjonal master i treningsfysiologi (MSPORT)

<b>Postadresse</b> Postboks 8905 7491 Trondheim	<b>Org.nr. 974 767 880</b> E-post: dmf-post@medisin.ntnu.no  <a href="http://www.ntnu.no">http://www.ntnu.no</a>	<b>Besøksadresse</b> Medisinsk teknisk forskningssenter, Olav Kyrres gt 9	<b>Telefon</b> +47 73 59 88 59  <b>Telefaks</b> +47 73 59 88 65	<b>Saksbehandler</b> Lars Gronflaten  Tlf: +47 73 59 01 40
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All korrespondanse som inngår i saksbehandling skal adresseres til saksbehandleren ved NTNU og ikke direkte til enkeltpersoner. Ved henvendelse vennligst oppgi referanse.



- Erfaringsbasert master i barn og unges psykiske helse (MBUPHLS)
- Erfaringsbasert master i helseinformatikk (MHLSINF)
  - Studieretning for studenter med informatikkfaglig utdanningsbakgrunn
  - Studieretning for studenter med helsefaglig utdanningsbakgrunn
- 1-årig videreutdanning i ultralyddiagnostikk for jordmødre (MDULTRALYD)